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No. 2322.

JULY 26, 1924.

Vol. CI.

"Torch" Brand Products

*A Series of Medicinal and Toilet Preparations of
the highest quality of British origin and manufacture*

ON THE P.A.T.A.

Bark and Phosphorus Tonic :
Bottles, 1/6 retail, 9/- doz.

Brilliantine, Solidified :
Tins, 1/3 retail, 10/- doz.

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Chemical Food (Fruit Flavoured) :
4 oz., 8 oz., 16 oz., 1/-, 1/9, 3/- retail, 7/6, 12/6,
21/- doz.

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6/9, 10/-, 16/6, 30/- doz.

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24/- doz.

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Perfumes Concentrated :
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24/- doz.

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Bottles, 1/6 retail, 11/6 doz.

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Syrup of Hypophosphites Comp. :
4 oz., 8 oz. (cartoned), 1/6, 2/6 retail, 11/6, 19/-
doz.

Warming Liniment :
4 oz. (cartoned), 1/3 retail, 9/- doz.

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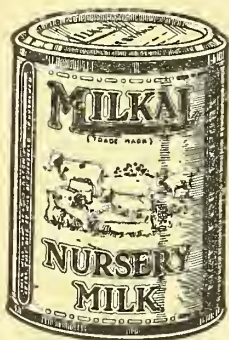
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Manufacturing Chemists

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MILKAL

THE CLEAN MILK

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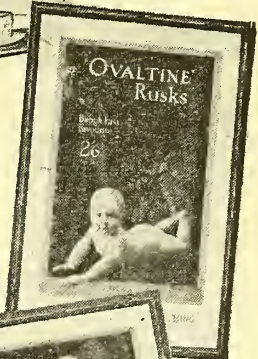
"Ovaltine" Rusks.

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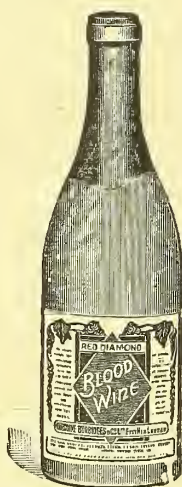
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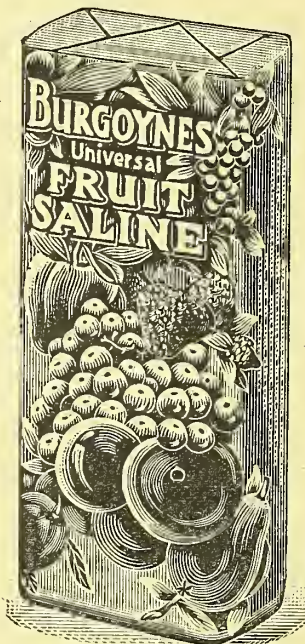
(BURGOYNE)



PACKED IN TWO
SIZES—

6's - to Gallon.
12's - to Gallon.

RED, BLACK AND GOLD
LABEL.



80%

PROFIT ON COST

Retail Price per Bottle

2/3 P.A.T.A.

SHOWCARD AND LEAFLETS
SUPPLIED.



SIZES—

2½-oz. Amber Panels
5-oz. „ Rounds
10-oz. „ „

ELEGANT FINISH.

*Our Illustrated List contains many such items.
May we send you a copy? It will interest you.*

BURGOYNE, BURBIDGES & CO., LTD.
East Ham, E.

“SAUROLO”

ICHTHYOL
SUBSTITUTE

(Ammon: sulpho ichthyolicum)

also

RAW SAUROLO

for veterinary use

Manufactured by

S. A. Minière Scisti Bituminosi
Di Meride E. Besano,
Meride (Suisse).

“RHODIA”⁹⁹ Brand

ANTI-PYRETICS
GUAIACOL PRODUCTS
PHOTOGRAPHIC
CHEMICALS

SALICYLATES
VANILLIN
and other fine chemicals.

Manufactured by

SOCIÉTÉ CHIMIQUE
DES USINES DU RHÔNE,
PARIS.

QUININE and SALTS

QUININE DICARBONATE
QUININE ETHYLCARBONATE
CINCHONIDINE
CINCHONINE
QUINIDINE
QUINOIDINE

AND SALTS

Manufactured by the

BANDOENGSCHE KININEFABRIEK
AMSTERDAMSCH E CHININEFABRIEK
NEDERLANDSCHE KININEFABRIEK

Apply to

Tel. No.
City 6550
(8 lines)

R. W. Greeff & Co. Ltd.
THAMES HOUSE, QUEEN STREET PLACE, LONDON, E.C.4.

Tel. Add.
“Greeff Cannon,
London.”

Branch Office

PALATINE BANK BUILDINGS, 10, NORFOLK ST MANCHESTER.

Tel. No. City 5706/7.

Tel. Add. Greeff, Manchester.



For your Boxes and Labels de Luxe...

L. MARBŒUF & C^{IE}

39 RUE DE LA GRANGE AUX BELLES
PARIS

SOLE REPRESENTATIVE FOR ENGLAND C.A. BLANCHET 168 REGENT STR. LONDON. W.1. TEL. GERRARD 6948

Maw's Page



Maw's Douches High Quality and Low Prices

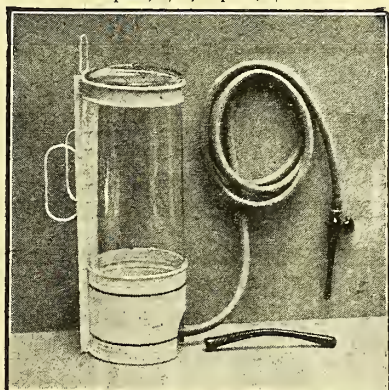
To sell an inferior or shoddy douche is to plant seeds of mistrust and dissatisfaction in your customers' mind because the average customer has little knowledge of judging an article of this description and leaves it entirely to the pharmacist to supply the most suitable and reliable. The name "Maw" on a douche is a guarantee of sound quality and workmanship. We have been makers of douches for many years, and all our patterns are designed to meet modern requirements, while our quality is up to the highest standard and our prices based on the lowest level. The douche illustrated on this page and the others quoted below are all supplied with six feet of good quality red rubber tubing with rolled ends to prevent splitting, and vulcanite stopcock, rectal and vaginal pipes.

PRICES:

Maw's "Crystal" in white enamelled tin frame,			Per dozen
	1 pint		39/-
Ditto	ditto	2 "	40/-
Ditto	ditto	3 "	45/-
Ditto	ditto	4 "	50/-
Ditto, in bronzed tin frame	2 "		31/-
Ditto	ditto	3 "	36/-
Ditto	ditto	4 "	40/-
Spare glass linings, each, 1 pint, 1/6; 2 pint, 1/9;			
3 pint, 2/-; 4 pint, 2/3.			

Steel Enamelled—			Per dozen
Without handle, 1 pint	...	...	37/-
Ditto	2 "	...	40/6
Ditto	3 "	...	46/-
Ditto	4 "	...	52/6

Enamelled White, Ordinary Quality—			Per dozen
Maw's "Family," 1 pint	...	...	32/3
Ditto	2 "	...	37/3
Ditto	3 "	...	39/6
Ditto	4 "	...	42/-
Extra for "Standard" Tubing for any of the above			6/-
Extra for "Best" ditto			10/6



Maw's
Crystal Douche

"Velfin" Combination Douche and Hot Water Bottle.

The "Velfin" Combination Douche which is not illustrated, is a different type of douche, but is extremely popular. It is constructed of India-rubber—the Reservoir being in the shape of a hot water bottle which can be used separately if desired by inserting a metal screw stopper.

Fitted with 6 feet tubing, vulcanite stopcock, vaginal and rectal pipes, complete in box.

3 pint	...	...	83/6 per dozen.
4 pint	...	...	86/6 "

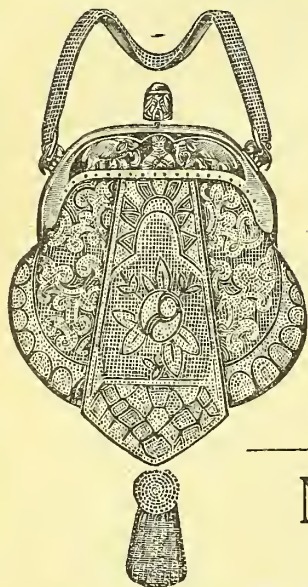
S. Maw, Son & Sons, Ltd.,
Aldersgate St., London,
and Barnet.



Telephone: City. 7
Private Branch Exchange
Telegrams: Eleven Cent London

Cables: Eleven London
Code: A.B.C. 4th & 5th Edition

EVERYTHING FOR YOUR FANCY GOODS DEPARTMENT



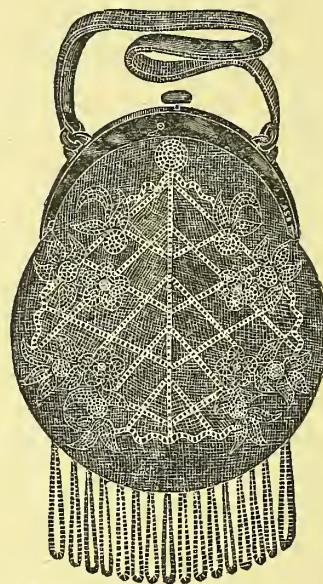
BEADED BAGS

from **4/6** each

A GREAT VARIETY OF
LEATHER
Hand-Bags and Pochettes
from **1/-** each

Manicure and Vanity Cases

NOVELTIES
OF ALL DESCRIPTIONS



ADOLPH SCOTT, Ltd.

Telephone : NORTHERN 2102.

24, 25 & 26 Gt. Hampton Street

— **BIRMINGHAM** —

Telegrams : "ADOLPH, B'HAM."

U. S. A. GILLETTE BLADES

(5's and 10's) 28/3 box, 3 boxes 82/6

CANADIAN GILLETTE BLADES
26/9 per box, 3 boxes 78/6

U.S.A.

In 6's and 12's, 30/- per box of 10 doz.

PIONEER GILLETTE RAZORS
with 1 U.S.A. Gillette Blade, 30/- doz.

"460" GILLETTE RAZOR
with 1 blade, 31/- doz.

HOLLOW GROUND RAZORS
(Tuckmar), 27/- doz.

VALET "99" RAZORS
22/- doz., Blades 36/- per box.

Send all your enquiries to

KEAN'S, The Razor People
27 FARRINGDON STREET, E.C.

**WOULD YOU
REFUSE
ONE GUINEA**

→ **FOR NOTHING ?**

Particulars from

STAMBOIS OF LEEDS

34 CALL LANE, LEEDS.

VERY SPECIAL PRICES
TO WHOLESALE & LARGE DEALERS
OF

**GENUINE
Gillette
BLADES**

(U.S.A. AND CANADIAN.)

WRITE FOR DETAILS IMMEDIATELY TO

WARDS OF WARRINGTON

The Largest Gillette Suppliers in Great Britain.

TAKE ADVANTAGE OF THE Great Gillette Boom!

*Astounding
Value*

in Brand New Gillette Goods *direct from the Factory in* **U.S.A.!**

TO every purchaser of one box of Gillette Blades, we will give

ABSOLUTELY FREE OF CHARGE one five-shilling Gillette Razor.

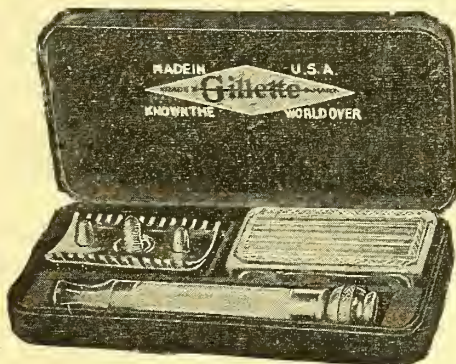
OUR price for one Box of Genuine U.S.A. Gillette Blades is $31\frac{1}{8}$ less $2\frac{1}{2}\%$ discount for prompt cash, together with one bonus Gillette Razor.

THE boxes, by the way, contain either TEN packets of TEN blades, or TWENTY packets of FIVE blades—as desired.

THE blades sell at $4\frac{1}{6}$ per packet of ten or $2\frac{1}{3}$ per packet of five, so that each box of blades realises £2-5-0; add to this the 5/- bonus razor, making total of 50/-.

50/- FOR 30/11

**This
Gold-
Plated
Razor**



Free

Beacon Gillette.

Dark blue leatherette case, containing gold-plated razor, and **TWO BLADES (FOUR SHAVING EDGES)** in gold-plated chased blade box.

Obtainable from:

OSBORNE, GARRETT & CO., Ltd.,
London, Birmingham and Glasgow.
SANGERS, 258 Euston Road, London, N.W.1.
CROWDEN & KEEVES, Ltd.,
62 Southwark Street, London, S.E.1.
H. M. KLARNETT, 5 Houndsditch, E.1.
W. E. BINGHAM & CO., 47 Shudehill, Manchester.

MAW, SON & SONS, Ltd.,
7 Aldersgate Street, E.C.1.
M. STECKLYN & SONS, 17 Houndsditch, E.1.
RYAN WHITE & CO., Ltd.,
31 High Street, Southampton.
BARCLAY & SONS, Ltd.,
95 Farringdon Street, E.C.4.

WHOLESALE ENQUIRIES: OGEE SELLING SERVICE LTD., 51-54, FRITH STREET, W.1.

ALKIA SALTRATES^{AND} REUDEL BATH SALTRATES

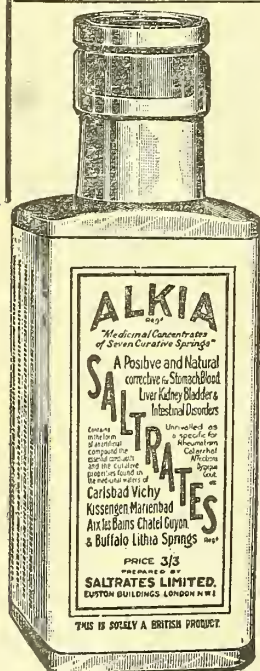
SPECIAL WINDOW-DISPLAY BONUS TERMS TO RETAIL CHEMISTS

Guaranteed effective for 30 days, from Saturday, July 26th, 1924.
Thereafter subject to cancellation without notice.

STANDARD CASES packed only as explained below.

NO EXCEPTIONS CAN BE MADE

Symbol	Contents	List Price	Bonus	Value
HALF-GROSS ASSORTED CASES				
A	{ 3 dozen small (2/-) R.B.S. 2 " large (3/3) " " 1 " ALKIA }	\$7 10 0	{ 1 packet small R.B.S. 2 packets large " " 1 bottle ALKIA }	11/9
B	{ 4 dozen small (2/-) R.B.S. 1 " large (3/3) " " 1 " ALKIA }	\$6 18 0	{ 2 packets small R.B.S. 1 packet large " " 1 bottle ALKIA }	10/6
C	{ 4 dozen small (2/-) R.B.S. 2 " large (3/3) " " }	\$6 18 0	{ 3 packets small R.B.S. 1 packet large " " }	9/3
HALF-GROSS STRAIGHT CASES				
D	6 dozen small (2/-) R.B.S.	\$5 14 0	4 packets small R.B.S.	8/-
E	6 " large (3/3) " "	\$9 6 0	4 packets large " "	13/-
F	6 " ALKIA	\$9 6 0	4 bottles ALKIA	13/-
3 DOZEN ASSORTED CASE				
G	{ 2 dozen small (2/-) R.B.S. 1 " large (3/3) " " 1 " ALKIA }	\$3 9 0	2 packets small R.B.S.	4/-



ON GROSS ORDERS CONSISTING OF ANY TWO OF THE ABOVE HALF-GROSS STANDARD CASES THE FOLLOWING ADDITIONAL FREE GOODS WILL BE SUPPLIED:—

**1 packet large (3/3) R.B.S.
1 bottle ALKIA**

All standard case orders are dispatched
CARRIAGE PAID to your door and in
FREE CASES.

WINDOW DISPLAY

As a consideration for the above bonus allowances we require only that you display in your window for a fortnight the showcard accompanying the order, also at least one dozen of our products.

SALTRATES LIMITED
Euston Buildings
London, N.W.1



*Nurse
says*



THE "CLINIC"

HYGIENIC FEEDING BOTTLE

Is Natural, Simple, Safe and Clean

Outfit complete with two-hole feeder, teat, valve and cleaning brush. The Teat and Valve are ribbed and of purest rubber, so contrived that there is no risk of them becoming detached from the neck of the bottle during the feed.



Each packed in finely printed carton, with double lock-ends for security.

Per doz... 6/6

3 doz. ..at 6/3

6 doz. ..at 6/-

1 gross for 70/6

SHOWCARDS FREE

*Special quotations
for Export.*

Six dozen parcel with attractive Showcard for 36/-

AYRTON, SAUNDERS & CO., LTD.

34 Hanover St.

Telephone: Royal 4861
Telegrams: "Sundries, Liverpool."

LIVERPOOL

The
Famous Natural Aperient Water.

Hunyadi János

An extensive propaganda is being carried out among the general public which is resulting in a largely increased demand for this world renowned Natural Aperient Water.

Hunyadi János has for more than fifty years been recognised as the best of the **NATURAL** mineral waters containing sulphate of soda and sulphate of magnesia. Its laxative action is sure but gentle: it stimulates the liver and cleanses the blood.

Prices to the Trade :

24/- per doz. large bottles or 48/- per case of 25
18/- „ „ small „ or 72/- „ „ „ 50

Net, free delivery in London or any station in Great Britain.

Minimum Retail Prices :

2/6 per large bottle. 2/- per small bottle.

Many of your customers who already know its value will be glad to get HUNYADI JÁNOS again. Others will want to buy it on the recommendation of their doctors, who constantly prescribe HUNYADI in preference to ordinary aperients, therefore it pays Traders to keep a stock of this famous **NATURAL** Aperient Water.

*Attractive Show Cards, Wrapping Papers, and Weight Cards
forwarded on application.*

Sole Wholesale Depot :


INGRAM & ROYLE, LTD.

BANGOR WHARF,

45, BELVEDERE ROAD LONDON, S.E.1.

19 South John Street, Liverpool.

Bath Bridge, Bristol.

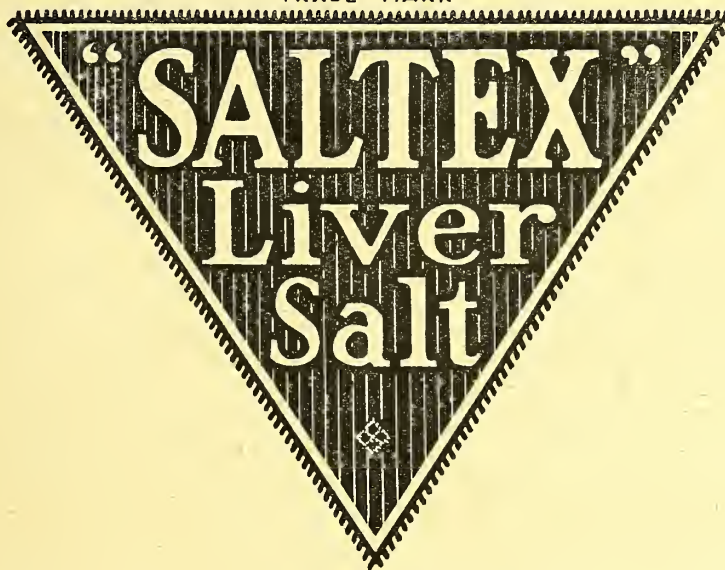


In the Long Run—Quality Tells!

IT has ever been the experience of the House of Kerfoot, that new products of merit can "win their spurs" without the stimulus of extensive publicity in their early days.

"Saltex" Liver Salt, our latest Effervescible novelty is a case in point. "Saltex" is already showing signs of success—not because it is extensively advertised, not because it undercuts all its competitors in price, but simply because Chemists are finding it to be what we claim for it—the best Liver Salt made—more palatable, more effective and more attractively packed than any of its competitors—a superior article of definitely pharmaceutical quality.

TRADE MARK



Two showcards free with
each order.

Retail price, 9d. per tin.



THOMAS KERFOOT & CO LTD
BARDSLEY VALE, LANCASHIRE,
& Bardsley House, London, N.1
ESTABLISHED 1797

A/395

COPYRIGHT



The only Baby Food whose claim is backed by rigid scientific proof

Humanised Trufood is made at the Creameries, Wrenbury, from the purest milk that comes from the rich pastures of the famous Cheshire dairy country. It contains soluble lactalbumen in the same colloidal condition and in the same quantity as in breast milk. It is standardised as regards its fat content, and the casein present corresponds to human milk and not to cows' milk. In short it is analogous in composition to breast milk, as the following analysis clearly shows :—

	Breast Milk	Cows' Milk	Humanised Trufood
Lactose	6.5	4.7	6.25
Fat	3.3	3.5	3.45
Casein	0.9	3.0	0.80
Lactalbumen	0.4	0.3	0.60
Salts	0.2	0.8	0.65
Water	88.7	87.7	88.25
	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>

This result has been achieved by removing a part of the casein of full-cream Cheshire milk, so that, after the addition of suitable quantities of pure fresh cream and lactose, a milk powder of the above composition results.

No other Infants' Food on the market is justified in claiming this close analogy to human milk.

You are certain to be asked for Trufood, and should order at least a minimum supply to meet enquiries.

If you are not yet stocking Trufood, please ask for sample and special trade offer.

TRUFOOD

TRUFOOD LIMITED

The Creameries, Wrenbury, nr. Nantwich, Cheshire

T.F. 119-130

**When buying
LEMONADE POWDER
make sure**

1. That the quality is the best,
2. That the advertising matter is attractive,
3. That the retail price is protected through the P.A.T.A.

**G.O. LEMONADE
AND
GREENWICH LEMONADE**
is all this and more.

*Drop a card for a sample packet and
Window-Show Terms.*

The Greenwich Lemonade Co.
(J. MILNER, M.P.S.)
11 John Penn St., London, S.E.13

IRVONA

THE MOST POPULAR NERVE TONIC
AND FLESH BUILDING TREATMENT.



A large and regular advertising campaign to support the sales of Irvona is guaranteed, and every chemist should carry stock and let the public know that he does so in order to share in the growing boom in this excellent product. Neat and attractive Show Cards, 11" x 4½", sent on application.

The trade prices are :—

1/3 size "IRVONA,"	12/-	per doz.
5/- "	48/-	"
12/- "	115/-	"

The old sizes (3/- and 15/-) have been withdrawn, and any chemist still having stock of these should return them to me. They will be credited in full and exchanged for the new sizes.

IRVOLAX (the safe aperient) is also being asked for, and the prices are 1/3 size 12/- per dozen : 3/- size 29/- per dozen.

Obtainable through the usual wholesale houses, or direct against cash or usual trade references.

P. J. WILLIAMS
27 Finsbury Street, LONDON, E.C.2

Why it pays to push an Original —

An original product is always preferred by the people who matter—they trust a name which is a household word and instinctively resent the mention of an imitation or substitute.

* * *

There's nothing "just as good" as Horlick's—the original Malted Milk.

* * *

Customers value and appreciate sound advice—that expert knowledge which is the result of long experience.

* * *

In recommending Horlick's your advice is as good as the product.

* * *

Gratified as the result of your recommendations, satisfied customers are your best assets—they gain confidence in you and come back.

* * *

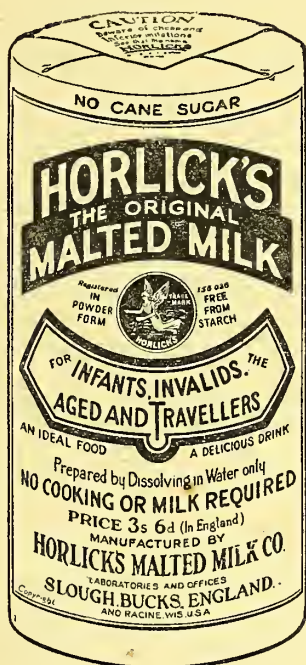
Horlick's always satisfies.

* * *

The sale of Horlick's—the Original—is and always has been directed through Chemists, whilst substitutes and imitations are often exploited through other trades.

* * *

Attractive advertising material for Window Display and Counter Distribution free and carriage paid on application to the Company.



**THE RIGHT
PACKAGE**



Made in England by

Horlick's Malted Milk Co., Slough, Bucks.

REMOVAL NOTICE

JOHN W. ROYLE, LTD.

IMPORTERS OF ALL NATURAL MINERAL WATERS

wish to inform their friends that owing to the continued support that they have received during the last 12 months, they are moving to larger premises. On and after MONDAY, 21st JULY, their address will be—

"PHOENIX HOUSE,"

19 OXFORD STREET, LONDON, W.1

Telephone No. : MUSEUM 1474

They take this opportunity of thanking all their friends for past favours, and solicit their continuance with every confidence in future.

A Health Salt
that sells for
8d. and 1/2

Small Tin.

Large Tin.

NATURAL
HEALTH SALT

The Original Health Salt of the World.

Summer-time sales are always high with "Natural"—it is in great demand as an effervescent thirst-quencher, and stands alone as a health-giving saline.

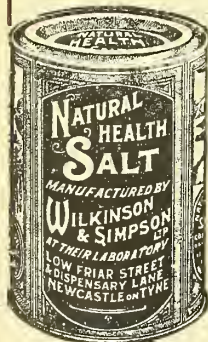
Consistent advertising is creating sales for you. Stock "Natural"—show it in your windows—on your counter. Take advantage of this good trade. The profit is worth while.

Write for full particulars and terms—

WILKINSON & SIMPSON, Ltd.

Manufacturing Chemists,

NEWCASTLE-ON-TYNE.



NOW IS THE TIME TO ORDER

MASON'S
EXTRACT OF HERBS

Newball & Mason
NOTTINGHAM



"Good! It's Mason's!"

IMPORTANT PRICE REDUCTION.

LORIMER'S "GOLD MEDAL" CHEMICAL FOOD



$\frac{1}{4}$ lb.	Size to Retail	$10\frac{1}{2}$ d.	P.A.T.A.	...	7/-	per dozen
$\frac{1}{2}$ lb.	"	"	"	...	12/-	" "
1lb.	"	"	"	...	20/-	" "
2lb.	"	"	"	...	36/-	" "

Our new Price List quotes reduced prices for many packed goods. May we send you a copy?

LORIMER-MARSHALL, Ltd., 12 Tower Hill, London, E.C.3

LOOK TO YOUR STOCKS.

A LARGE AMOUNT IS BEING EXPENDED ON ADVERTISING

LAMPLOUGH'S PYRETIC SALINE

On the P.A.T.A.

Over a Century's Medical Reputation.

The original Saline. It differs from all others. Test the resulting solution from Lamploughs for acidity, and then compare it with other makes. You will find no free acid in Lamploughs.

The Public always insists on having the Original.

MINIMUM GUARANTEED PROFIT OF 33 $\frac{1}{3}$ % on COST PRICE

New selling prices 2/6 and 4/6 per bottle.

SPECIAL WHOLESALE TERMS FOR QUANTITIES AND FOR EXPORT.

Obtain full particulars from—

HENRY LAMPLOUGH'S SALINE 1 EDEN STREET, HAMPSTEAD ROAD,
LONDON, N.W.1

Telephone : MUSEUM 160.



We are actual distillers of Oils of Neroli, Lavender, Bergamot, etc., and can quote the best prices, based on the distillation costs of the oils, for

EAU DE COLOGNES AND LAVENDER WATERS

in bulk or bottled.

All our brands are made with the purest Ethylic Alcohol (B.P.), and only natural floral essences are incorporated.

They compare with any brands on the market and yield a handsome margin of profit to the retailer.

Samples and prices on application.

Try our Watch-shape Eau de Cologne and Lavender Water. They sell at sight and bring
REPEAT ORDERS.

SPURWAY ET CIE.
LIMITED

89 GREAT EASTERN ST., LONDON, E.C.2

Telegrams: "Neroli, London."
Telephone: Bishopgate 1372.

Factories & Distilleries: Cannes-Grasse, Riviera.
Technical Laboratories: Paris.

NEW YORK. LEIPZIG. KINGSTON (ONTARIO).

ESSENCES

HIGHEST CONCENTRATION.

Sole Agents for Gt. Britain and Colonies

FOR

FRIES & BRO. NEW YORK

The World-Renowned Makers of
FIRST QUALITY ESSENCES.

Stocks in London. **PEACH
APRICOT
HONEY
MAPLE
&c.** Ask for Quotations & Samples.

A. CONNELL & CO., Melba House,
WENLOCK ROAD, CITY ROAD, LONDON, N.1
Phone: Clerkenwell 7266. Tele.: "Nitrozone, Ald. London."

"Newbery's"
FRANCIS NEWBERRY & SONS LTD.

"NADA"

INSECT BITE PERFUME

A LINE that has caught the popular fancy to a remarkable degree. An innovation in Gnat and Midge Bite prevention with a high Rideal-Walker co-efficient. Gives a good profit to the Pharmacist.

PRICE - - - **6/-** per dozen
with Bonus of one tube per dozen for quantities of 3 dozen and upwards.

To retail at - - - **1/-** per tube

Artistically mounted on a suitable show-card for Effective Display.

FRANCIS NEWBERRY & SONS, Ltd.
27 Charterhouse Square, London, E.C.1.

13 Crichton Place,
Cardiff.

12 School Lane,
Liverpool.



This New
COLOURED SHOWCARD
free!

A
pleasing
reminder

A magnificent new multi-coloured (10 colours) Showcard, prettily designed as illustrated, will be sent free and post free upon receipt of a post card from any Chemist.

These showcards have been received with approval by retailers everywhere, and will serve as a pleasing reminder to your customers to purchase the only "Genuine and Original Eau de Cologne, Established 1709."

If you are not stocking, now's the time to send for a small supply which will be supplied on specially advantageous terms.

The
Genuine & Original
EAU de COLOGNE
ESTABLISHED 1709.

Sole Agents—
BLACKALLER & PLEASANCE, 8, Laurence Pountney Hill,
Cannon Street, London, E.C.4.

The 'ESSENFLOUR PRODUCTS Ltd.'

*Distillers of Essential Oils and
Manufacturers of Perfumery Products*

MYSORE - - S. India

have been appointed Sole
Consignees and Distributors of

MYSORE GOVT. SANDALWOOD OIL

Satisfying all pharmacopœia and possessing an excellent aroma.

*Samples and prices will be readily supplied
on application to our correspondent at*

'PERFUME HOUSE,' 6-8 Beauchamp Street, London, E.C.1

Telephone : HOLBORN 2499.

Telegrams : "EKDUM LONDON."

Pure English Oil of Peppermint

GROWN ON MY OWN FARMS

£1,000 TO CHARITY *I will give £1,000 to any Charity named by any person
who can prove my Peppermint Oil to contain any
adulterant or foreign oil.*

INSPECTION OF FARMS AND DISTILLERY CORDIALLY INVITED.

Seymour's Distillery & Herb Farm, Holbeach, Lincs.

Telegrams : Raab, Roermond.

**Aromatic Chemicals Flower Oils
Synthetic Perfumes Essential Oils**

CHEMICAL WORKS, ROERMOND

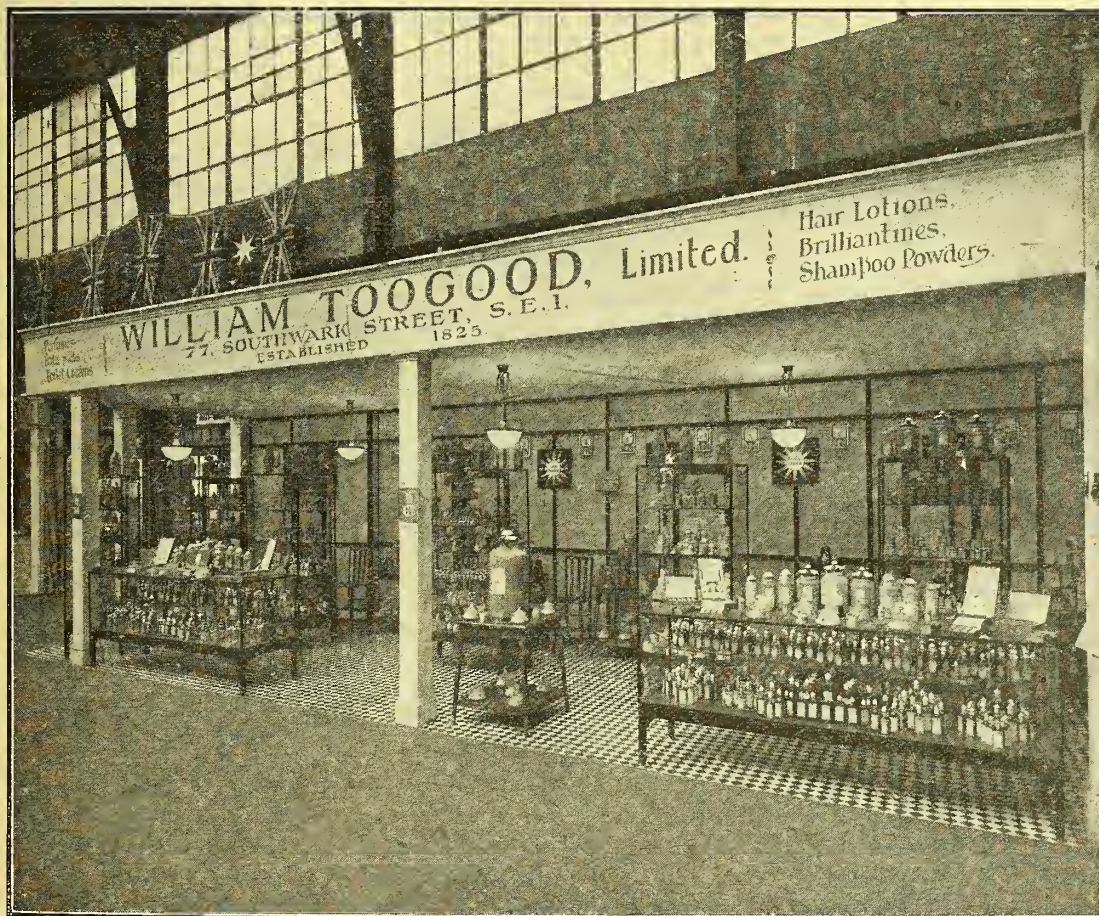
H. RAAB & CO., ROERMOND, HOLLAND.

Agent for the U.K.:

MR. ALFRED PAUL WHITE, 5 Water Lane, Gt. Tower St., London, E.C.3

Telegrams : Whaiter, Bilgate, London.

WE wish to advise our customers and all Chemists who were unable to visit our Exhibit at the British Industries Fair in May last and who no doubt will be visiting London for the Wembley



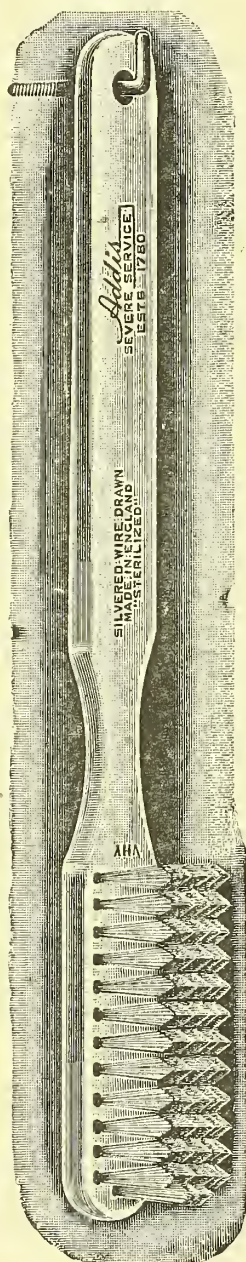
Exhibition, that we have reproduced our Exhibit in our Showrooms, where we shall be glad to welcome our friends in London, from the Provinces, and from abroad.

WILLIAM TOOGOOD, Ltd.

77 SOUTHWARK STREET - - - LONDON, S.E.1

The First Tooth Brush

ADDIS
SEVERE SERVICE
Estb. 1780.



Copyright Reserved.

was made in 1780 by WILLIAM ADDIS in London, England. The business then founded has been carried on continuously, passing direct from father to son. The policy of the business has always been "Service" to user.

When purchasing a Tooth Brush, should you require a stiff brush for Severe Service, ask for

"Addis
Severe Service"

This is typically an English Style Gentleman's Brush, made of Unbleached Bristles, with small serrates on a plain straight handle.

For those who require a smaller and more stylish brush the

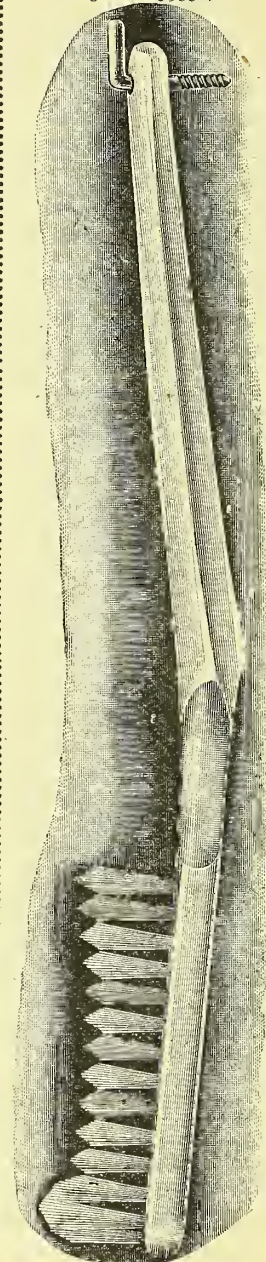
"Addis
Prophylactic"

on a curved handle, will fill the want. This brush is made in Very Hard Unbleached Bristles, Hard White, Medium White, and Soft if required. We recommend the Hard for the average use, bristles always being softer when wet.

Both these brushes are hand-fashioned and hand-drawn, the best materials and methods of workmanship being used regardless of cost.

Manufactured in England and Guaranteed by:
THE OLDEST FIRM OF TOOTH BRUSH
MANUFACTURERS IN THE WORLD

ADDIS
PROPHYLACTIC
Reg. No. 593367.



Copyright Reserved.

ROBT. ADDIS & SON
BRUSH WORKS, HERTFORD, ENGLAND.



BONUS SCHEME

FOR

'WHITE CROSS' BABY POWDER

LAST SEVEN DAYS IN WHICH
∴ YOU CAN PARTICIPATE ∴

(Offer definitely closes July 31st.)

CUSSONS' SPECIAL BONUS SCHEME is one of the most generous ever offered to the pharmacist. Cussons have made big sacrifices of profit to enable the pharmacist to benefit by a line worthy of the finest traditions of a British House; an offer of a nature that cannot be continued indefinitely.

**FOR ONE WEEK MORE ONLY
OUR 'WHITE CROSS' BONUS
SCHEME WILL BE AVAILABLE**

Every pharmacist who has not tried 'White Cross' Baby Powder as a quick seller should at once avail himself of our very liberal offer. 'White Cross' Baby Powder has a

vigorous advertising campaign in the leading Women's papers to bring customers to your pharmacy.

Place an order to-day with your wholesaler for 'White Cross,' and you will receive 20% in goods additional to your order. 'White Cross' is a P.A.T.A. line selling at 10½d. per tin, and costs you ordinarily 69/- per gross, thus showing considerably over 50% profit.

'White Cross' Baby Powder is of superlative merit, British manufactured throughout, and certain to draw customers for baby requisites to your shop. The big sprinkler-top container is a silent salesman all the time. ∴ ∴ ∴

**⚡ This offer positively closes on the 31st
of JULY. Write out your order AT ONCE
and take advantage of our generous terms.**

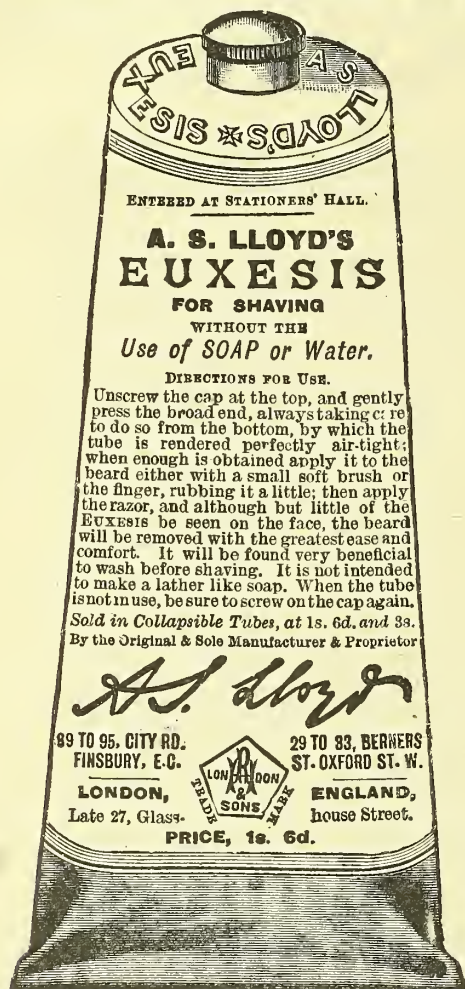
Our Stand at Wembley is **A 11**, Chemical Hall, Palace of Industry

CUSSONS, SONS & CO., LTD. Makers of Fine Soaps and Perfumes **KERSAL VALE WORKS MANCHESTER**

A. S. LLOYD'S EUXESIS

(THE GENUINE).

For Shaving without Soap, Water, or Brush.



Sold by all Perfumers and Chemists throughout the World.

R. HOVENDEN & SONS having purchased, under an administration suit, the Business of the late A. S. LLOYD, with the Receipt, Trade-Mark, and Goodwill of the celebrated Euxesis, the Trade are cautioned that the original and genuine Euxesis is now manufactured at our Factory ONLY and may be obtained at either of our Warehouses.

PRICES ON APPLICATION.

NOTICE.—THE GENUINE A. S. LLOYD'S EUXESIS bears a label printed in BLACK only on a Yellow ground, with our Trade Mark at the bottom, as illustration.

Proprietors: **R. HOVENDEN & SONS, LTD.**
LONDON: 89-95 City Road, E.C.1; and 29-33 Berners Street, W.1

Nuctone

for GREY HAIR

IT WILL PAY YOU TO FILL THE DEMAND

The absolute dependability of NUCTONE, plus NUCTONE advertising, ensures continuous and rapid turnover.

You have behind you the NUCTONE Guarantee.

You have the certainty that your customers will be fully satisfied—and with this the equal certainty that they will return to you for future supplies.

NUCTONE cannot fail to pay you—the terms are liberal.

NUCTONE for Grey Hair has a tremendous and much appreciated advantage over instantaneous hair-dyes and is unique in many ways, chiefly because of its mode of action by which colour is gradually restored after the hair has been exposed to light and air.

It is a profitable business move to stock NUCTONE and give it all possible display.

Showcards and explanatory booklets for free distribution are furnished free on request.

GUARANTEE

The Manufacturers guarantee that NUCTONE is absolutely free from any combination of lead and sulphur, and contains no ingredients that can possibly injure the hair. NUCTONE can therefore be recommended with entire confidence to your customers.

Small size 3/9 per bottle. Trade terms 32/- per doz.

Large size 6/6 " " 52/- "

NUCTONE for dark and medium hair.

NUCTONE ECLAIRE for fair and auburn shades.

NUCTONE CONCENTRE for Gentlemen
(Supplied in the 6/6 size only.)

Obtainable from:

HENRY C. QUELCH & Co. Ltd.

4, LUDGATE SQUARE, LONDON, E.C.4
and other Wholesale Houses.

Manufactured by:

STEWART, GOODALL & DUNLOP, LTD.
4, Dering Street, London, W.1.

A. S. LLOYD'S EUXESIS.

For Shaving without Soap, Water, or Brush.

CAUTION.

The Labels on GENUINE EUXESIS bear two signatures—
A. S. Lloyd in Black Ink, and that of his Widow,
Aimée Lloyd, in RED. Refuse any other.

**Sole Manufacturers and
Proprietors:**

AIMÉE LLOYD & CO.

**23 PANTON STREET (formerly named Spur Street),
HAYMARKET, LONDON, S.W.**

N.B.—When ordering from Wholesale Houses write LLOYD'S EUXESIS (WIDOW'S).

HERE IS THE LINE you must surely have
been looking for in order to **increase your
profits** and meet your customers' ever-
increasing demand.

"GALJADO" SCURF LOTION for all SCALP and HAIR TROUBLES.

Small size, 10/6 per dozen.	S.P. 1/6 per bottle.
Standard " 16/6 "	S.P. 2/6 "
Large " 33/- "	S.P. 4/6 "

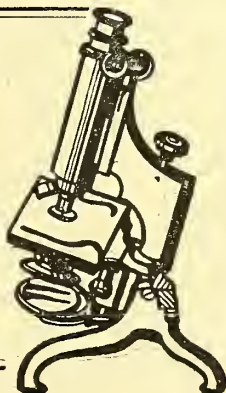
"GALJADO" TOILET PREPARATIONS are universally
renowned, and are obtainable of all Wholesalers or direct.
Current price lists sent free on application to

THE GALJADO PERFUMERY CO., Ltd.
9 Goswell Road, LONDON, E.C.1.

Profit by the new AMAMI Free Service.

In appreciation of your support of Amami
Shampoos, we have arranged that one of our
fully-trained Research Chemists will *always*
be in attendance in our Trichological Labor-
atory to give advice free of charge on
Biological or Trichological questions.
Send your troubles or bring them yourself and
use our microscopic reagents, etc., free.

PRICHARD & CONSTANCE (Wholesale) LTD.
Chemists by Examination,
4/10 Cheries St., Tottenham Court Rd.,
LONDON, W.C.1.



*Trade Terms, Showcards, Leaflets, etc.,
for AMAMI gladly sent on request.*

**DAGGETT & RAMSDELL'S
PERFECT
COLD CREAM**

Shows a good profit.
All wholesalers stock it.
Most chemists do.

Write for display terms.

American Drug Supply Co. Ltd.
40-42 Lexington Street,
London, W.1

Remember

“Beaverpuf”

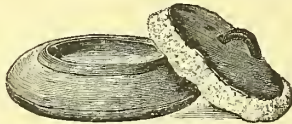
has

Trade Mark.

The Largest Sale of any Powder Puff in the world.

Is stocked by every up-to-date Stores.

Models and prices below.



Powder Puff only.

	Retail.	Each
Beaverpuf B 1	Fur Puff, Powder only	4/6
„ B 2	„ Powder and Rouge	7/6
„ B 3	„ Powder only	7/6
Lambpuf L.P. 3	Lambswool Puff, Powder only	6/6
„ L.P. 7	„ „ „	2/6
„ L.P. 9	„ „ „	4/0



Powder Puff and Rouge Pad.

	Retail.	Each
Lambpuf L.P. 10	Lambswool Puff, Powder & Rouge	6/6
„ L.P. 12	„ Rouge only	1/6
Nupuff N. 1	Fur Puff, Powder only	4/6
Beaverpuf K. 66	„ „	21/0
„ K. 54	„ „	17/6
„ K. 62	„ „	15/6
Beaverpuf K. 50	Fur Puff, Powder only	15/6
„ O. 1	„ „	17/6
Garter or Armlet Puff „	„ „	10/6
Refills	Powder or Rouge	0/6
„ K Models, B 3, L.P. 3 and O 1	„ „	1/0
Beaverpuf Patent Powder in Boxes	„ „	2/0

Terms:—5% Cash 7 days. 2½% Approved Monthly Account.

Sole Concessionnaires for Great Britain and Ireland,

“Beaverpuf” Ltd.

PRIEST
BRIDGE,

Mortlake, London, S.W.14.

Telephone: PUTNEY 166.

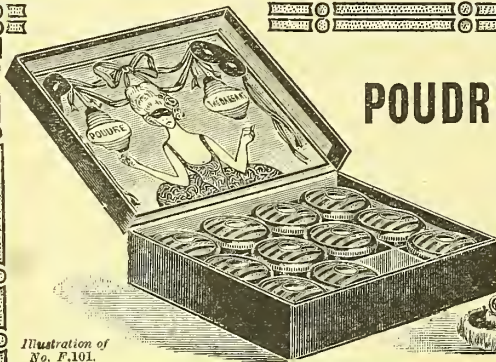


Illustration of No. F.101.

BIG REDUCTION IN PRICE

POUDRE COMPACTE—“THE DANSANT”

(Regd.)

In two } No. F.100 Complete with Puff ... 6/- doz.
 styles } „ F.101 „ „ „ and diminishing Mirror 7/6 „

Improvements in our methods and the adoption of more efficient machines designed by ourselves enable us to decrease considerably our production costs of these two charming lines, and we pass on the reduction to the trade so as to keep our increased output fully engaged. You should give these British-made lines a trial.

Manufactured only by

SOLPORT BROTHERS, Ltd.

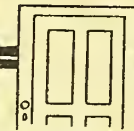
184/190 Goswell Road, London, E.C.1.

and obtainable through all Wholesale Houses.

Tetralene

REGD.
SUPERSEDES

Soap

CLEANS PAINT
WORK.CLEANS CARPETS,
UPHOLSTERY,
CLOTHES, ETC.REMOVES
GRIME
FROM HANDS.

THE PRODUCT WITH A MULTITUDE OF USES

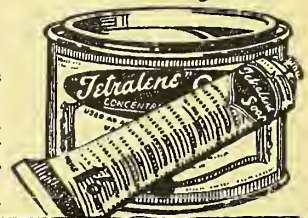
Rapidly and effectively cleans Paintwork of all descriptions. Removes Grease, Grime, and Tar from the Hands, Clothes, Motor Cars, etc.—in fact it will clean Anything and Everything, 10 times stronger than any soap. Sold in 1/- Tubes and Lever-top Tins 1/6

BIG PROFITS THE RESULT OF STOCKING TETRALENE

Apart from the exceptionally generous percentage of profits allowed the retailer with samples for distribution, a huge selling and advertising campaign will shortly be launched in the newspaper press and an enormous public demand created in your district. Be prepared by laying in a stock now.

Sample, Trade Terms, etc., supplied on request.

STOCKPORT UNITED CHEMICAL CO., LTD., STOCKPORT, ENGLAND.



JULY - SEPTEMBER, 1924

A big new Campaign
to advertise

EUCRYL



DURING July, August and September a bold and intensive advertising campaign for Eucryl will be carried on in the National Press.

Frequent 11 inch by 3 column spaces being booked in such daily papers as:—

Daily Mail,
Daily Chronicle,
Daily Mirror,
Daily Sketch.

Over 13 million readers should see each advertisement and a great increase in demand is to be expected.

You can make this campaign your own by prominently displaying Eucryl in your shop and making use of the attractive display material supplied.

EUCRYL LIMITED
SHIRLEY SOUTHAMPTON



*Most called for
of its class*

Price's Old English Lavender Soap has many imitators, but it remains the most called-for line of its class.

It is kept well before the public by strenuous and consistent advertising.

Send for a selection of display material.

PRICE'S SOAP CO. LTD. LEVER HOUSE, BLACKFRIARS, E.C. 4

Ly 15-380T

DEARBORN (1923) LTD.

37 Gray's Inn Road, London, W.C.1

Toilet Specialties.

	Price per doz.	Selling Price to Retailer P.A.T.A.
PILENTA SOAP ...	10/-	1/-
A complexion soap.		
PROLACTUM ...	10/-	1/-
For the lips.		
PARSIDUM JELLY ...	10/-	1/-
For wrinkles.		
ALLACITE OF ORANGE BLOSSOM ...	22/6	2/6
A dressing cream.		
BORANIUM ...	22/6	2/6
A hair tonic.		
CLEMINITE ...	22/6	2/6
For a face lotion.		
COLLIANDUM ...	22/6	2/6
For a face tint.		
PERGOL ...	22/6	2/6
A deodorant.		
TEKKO PASTE ...	22/6	2/6
Camphor cream.		
STALLAX ...	22/6	2/6
For a shampoo.		
JETTALINE ...	31/6	3/6
For clearing the skin.		
PHEMINOL ...	36/-	4/-
A depilatory.		
MENNALINE ...	36/-	4/-
For the eyelashes.		
MERCOLIZED WAX ...	18/- 31/6	2/- 3/6
A face cream.		
STYMOL ...	36/-	4/-
For oily complexions and blackheads.		
SILMERINE ...	22/6	2/6
Hair-curling fluid.		
BARSYDE ...	22/6	2/6
Dandruff eradicator.		
TAMMALITE ...	22/6	2/6
For grey and faded hair.		
LIQUID PERGOL ...	31/6	3/6
To check excessive perspiration locally.		
BICROLIUM ...	22/6	2/6
For whitening the hands.		
COCONOIDS ...	31/6	3/6
For figure development.		

The Products of

Messrs. PARKER, BELMONT & CO.

CLYNOL BERRIES ...	36/-	4/-
For obesity.	58/6	6/6
SOFT PALERIUM ...	45/-	5/-
For wrinkles.		
LIQUID NAIL POLISH ..	10/-	1/-
Brilliant and lasting.		

Stocked by ALL Wholesale Houses.

COLONIAL DEPÔTS AND AGENCIES.

Australia: ALL WHOLESALE, & DEARBORN (Australia), Ltd., Grace House, Clarence Street, Sydney.
South Africa: LENNON Ltd., Cape Town, etc.
 SIVE BROS. & KARNOVSKY, Johannesburg.
India: FRAMJEE & SON, Bombay.
 A. L. CHOUDRY, Calcutta.
New Zealand: SHARLAND & CO., Auckland and Wellington.
South America: DEARBORN (South America) Ltd., Calla Salta 264, Buenos Aires.
Straits Settlements & Federated Malay States: MEDICAL HALL, Ltd., Singapore.

A Constant Demand is made for SILKODONO for the HAIR & SCALP

DO you know how many times a day your assistants are asked for SILKODONO, the Magic Hair Remedy?

Silkodono is regularly Advertised in the National Dailies, including

Daily Mail, Daily Mirror, Daily Sketch, Weekly Dispatch, Daily Chronicle, Daily Express, etc., etc.

Also in monthly and weekly periodicals such as John Bull, London Opinion, Picturegoer, Passing Show, Humourist, etc., etc.

SPECIAL BONUS TERMS

for window and counter display

1/6 size 12/- per doz.
2/6 " 20/- "
4/6 " 26/- "

2 Bottles bonus on each doz. 3 doz. of one or assorted sizes sent carriage paid.

All London orders delivered free by our own motors.

THE REMEDY EVERYONE KNOWS

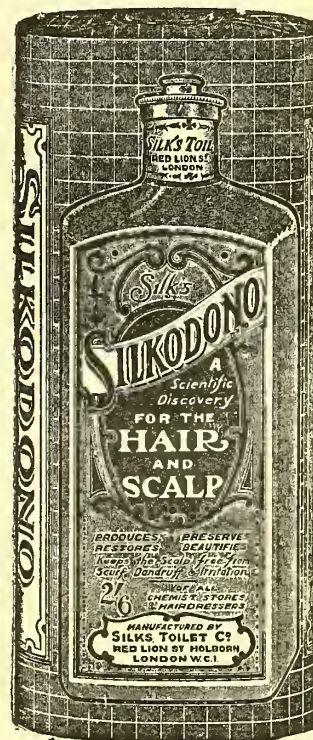
EVERY time you sell a bottle of SILKODONO, you find a satisfied customer. The value of this wonderful preparation is well known to many thousands of delighted users in all parts of the country. What about YOUR district?

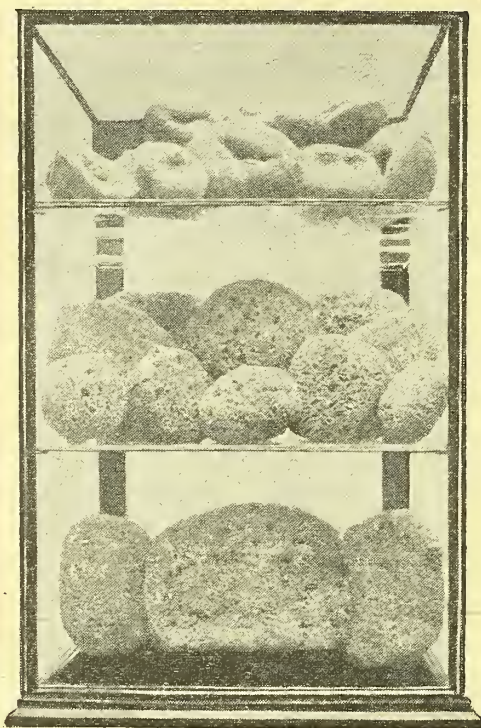
IF YOU DO NOT STOCK
SILKODONO
—get Busy To-day!

THE Familiar packages make a splendid show, and if you display them, together with the handsome showcards, customers will know you stock SILKODONO and buy it. The extensive Advertising now appearing in the Press makes it easy to sell SILKODONO.

SILK'S TOILET CO., RED LION ST., W.C.1.

Telephone - - - - - Chancery 8095.





SPONGES

that justify you in displaying them

*Buy from actual importers
and thus save intermediate profits*

All goods sent on approval carriage paid.

Write for Prices and Type Samples.

THE SPONGE FISHING & IMPORTING CO., Ltd.

25 Finsbury St., Chiswell St.
LONDON, E.C.

BUYING BRANCHES at Sfax, Tripoli,
Kalymnos-Symi, Hydra, Batabano, Nassau and
Florida.

SELLING BRANCHES at Brussels, Paris,
Barcelona and Hamburg.

'Phone:
Clerkenwell 5428.

Telegraphic Address:
"Sachiapas, Finsquare, London."

No connection with any 'Ring' or 'Combine.'

Bidwells'

YELLOW BRISTLE IN CENTRE—
WHITE BRISTLE ENDS.

IN TRANSPARENT TUBES;
STERILISED AND SEALED AT
FACTORY.



"Gloria" 1924 Model

REGD 314972

No 2

STRONG IN CENTRE WHERE STRENGTH IS REQUIRED.

17/- A DOZEN MEDIUM. 19/- A DOZEN HARD.

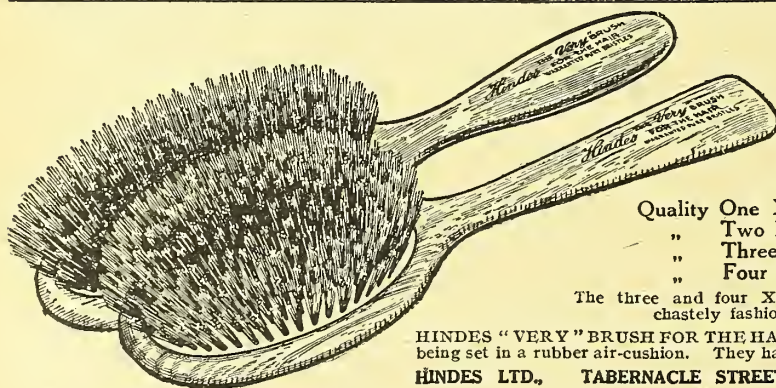
BEST QUALITY ONLY.
HARD AND MEDIUM.

HANDLES ASSORTED.
VENTILATED—
HOLE IN HANDLE.

Castle Mills

LONDON OFFICE AND SHOWROOMS:—
Australia House, Strand, W.C.2

Exminster, Devon



HINDES "VERY" HAIR BRUSH

Quality	One X	Sold at	7/6d. each.	} TRADE PRICE 33 1/2%
"	Two XX	"	10/6d. "	
"	Three XXX	"	15/- "	
"	Four XXXX	"	18/6d. "	

The three and four XXXX grade is made in Ebony or Rosewood
chastely fashioned in both oval and circular bodies.

HINDES "VERY" BRUSH FOR THE HAIR is guaranteed pure bristles, the multiple tufts
being set in a rubber air-cushion. They have been known to the trade for nearly 40 years.

HINDES LTD., TABERNACLE STREET, LONDON, E.C. :: Works: BIRMINGHAM

NEW KOKO TOILET LINES

On the P.A.T.A. List. Allowing full margin of profit

KOKO VANISHING CREAM 1/6 per jar P.A.T.A., 13/6 per doz.

KOKO COMPLEXION POWDER 2/- per box P.A.T.A., 18/- per doz.

(In Natural, Rachel, White and Rose)

KOKO SHAMPOO POWDER DE LUXE 4½d. per pkt. P.A.T.A., 3/4 per doz.

(USUAL WHOLESALE TERMS)

A N extensive advertising campaign has been planned for the new line, together with **"KOKO FOR THE HAIR,"** and space has been booked in practically every magazine and daily papers, including "DAILY MAIL," "MIRROR," "SKETCH," "EXPRESS," "CHRONICLE," "DAILY NEWS," etc., etc., for the remainder of the year.

SEND US A POSTCARD ASKING FOR PARTICULARS OF OUR GENEROUS WINDOW SHOW OFFER.

All orders for Koko Preparations should be sent to our Sole Distributing Agents,
Messrs. BUTLER & CRISPE, 80/82 Clerkenwell Road, London, E.C.1.

KOKO-MARICOPAS CO., LTD.,
16 Bevis Marks, London, E.C.3.

Telephone:
AVENUE 595.

800 DOZEN NAIL & CUTICLE SCISSORS

FORGED STEEL

Sizes 3½ in. & 4 in. Bent and Straight.

WHILST STOCK LASTS **7/-** DOZ.

STANDEN AND PERKS
Great Lister Street - - BIRMINGHAM

Manufacturers of

HIGH CLASS POWDER PUFFS & TOILET SUNDRIES

WHOLESALE
& EXPORT

**SPENCER
BROTHERS**

Telephone:
HOLBORN 3069

17 FARRINGDON AVENUE
HOLBORN VIADUCT, LONDON, E.C. 4

POWDER PUFFS!



"FELIX"

One of our Latest Creations!
A CERTAIN SELLER!

Manufacturers:

WILLIAMSON BROS.
126 Southwark Street, S.E.1.

Phone: HOP 3419.

Peldo
(Patent applied for)

**THE
INVISIBLE
GLOVE**

We are showing at the B.E.E. Stand No. A 76, Chemical Section, Palace of Industry, and would be pleased to receive a visit from you there, where you can have a practical demonstration of Peldo.

IF YOU SHOW 'PELDO' YOU WILL SELL IT!
'PELDO' IS ORIGINAL. It is not a Substitution for Anything.

Obtainable from all the Patent Houses @ **13/6** per dozen.
WINDOW DISPLAY MATERIAL FREE ON APPLICATION.

SOLE PROPRIETORS AND MANUFACTURERS:

C. R. HARKER, STAGG & MORGAN, LTD.
Devon Wharf and Bell Wharf,
EMMOTT STREET, MILE END, LONDON, E.1.

G. B. KENT & SONS, LTD.

Are known the World over as
the Largest Manufacturers of

**BEST
BRITISH
BRUSHES**

Please write for full Particulars to—
75 Farringdon Road, E.C.1.

FACE POWDER

Any Grade
Any Colour
Any Quantity
No order too large—none too small.
COLD CREAM—VANISHING CREAM
MASSAGE CREAM—TALCUM POWDER
All Merchandise in Bulk or in your own Containers.
Drug Grinding done for the Trade.

The O-PINE-O Manfg Co. Ltd., Montague Rd., Hornsey, London, N.8

The Evan Williams

ALWAYS IN GREAT DEMAND.
PRICE LIST ON APPLICATION.

The EVAN-WILLIAMS Co., Ltd., 14/15 Union St., W.1.

SHAMPOO

C. & D. Stock-Taking Sheets

Halve the Labour of Taking Stock.

Price of Complete Pad, 2/6 post free.

The Chemist & Druggist, 42 Cannon St., London, E.C.4



SHADEINE

For COLOURING GREY HAIR

This popular article is largely advertised
and stocked by all Wholesale Houses.

Trial Size 8d., per post 10d. 1/4 size, per post
1/7; 2/6 size, per post 2/10; 3/9 size, per post
4/3; 8d. size, 6/- doz.; 1/4 size, 12/- doz.; 2/6
size, 14/- doz.; 3/9 size, 36/- doz.

The SHADEINE CO., 58 Westbourne Grove, London, W.



**PAPIER POUDRE
POPPÉE ROUGE**

Made in Booklet Form in White, Rose and Rachel tints,
4d., 6d., 8d., and 1/4 sizes at 2/8, 3/9, 5/- and 10/- per dozen
nett, respectively.

ONE SIZE ONLY 1/-, at 8/- per dozen.

Sole Proprietors and Manufacturers:

PAPIER POUDRE, Ltd., 46 Baker Street, W.1
NONE GENUINE WITHOUT ABOVE TRADE MARKS.



Telegraphic Address: "CRESSWELL, HOLB., LONDON."

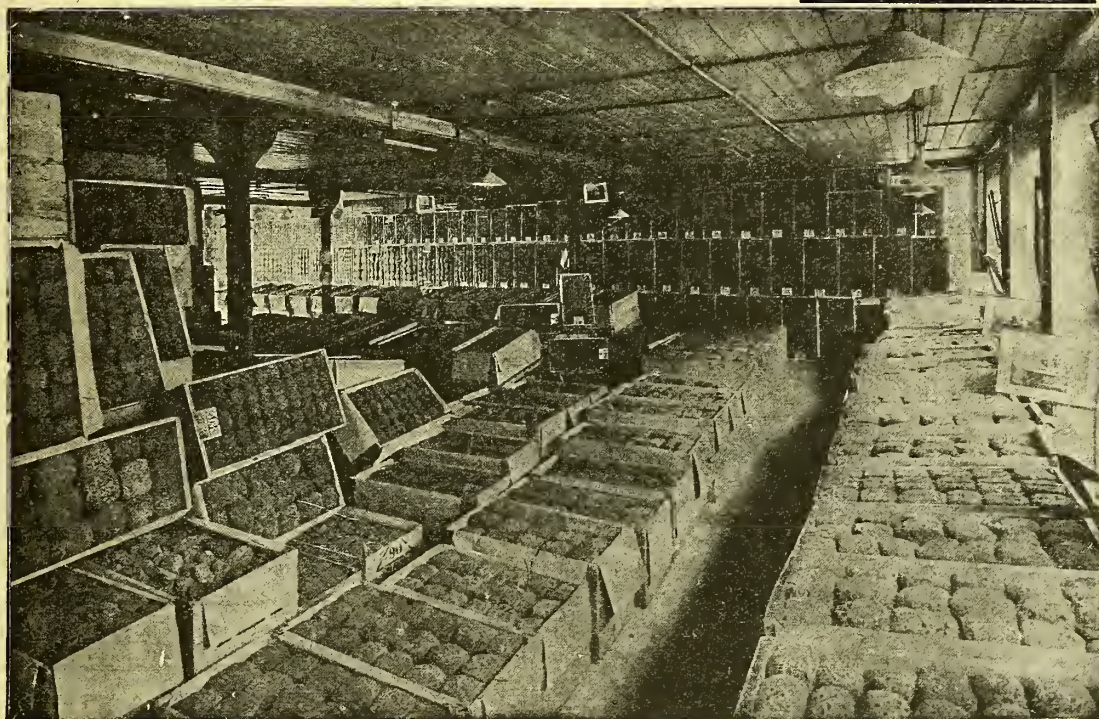
Telephone: No. 1432 Holborn.

THE SPONGE HOUSE

INTERNATIONAL SPONGE IMPORTERS, LIMITED,

CRESSWELL BROTHERS BRANCH

Sponge Importers, Exporters and Merchants, and Chamois Leather Dressers,
18 and 19 RED LION SQUARE - - - LONDON, W.C.1
 WITH THE LARGEST STOCKS OF ALL SPONGES IMPORTED DIRECT BY US FROM THE FISHERIES
 AT LOWEST PRICES. **WE INVITE COMPETITION.**



Buyers are invited to Call to inspect our Magnificent Stocks and make their own selections. Lowest Market prices. Absolutely Best Values. The following abridged List will serve as a guide to Buyers when writing.

UNBLEACHED MEDITERRANEAN SPONGES in Original Cases

THE CONTENTS OF THE FOLLOWING CASES WILL BE PRESS-PACKED AND SENT POST FREE TO COLONIAL AND FOREIGN BUYERS WITHIN THE RADIUS OF PARCELS POST.

To visitors at The British Empire Exhibition we extend a hearty invitation to inspect our stocks at above address.



HONEYCOMB.

Extra Choice. Finest Texture and Shape. The Pick of all the Fisheries.

Pieces in Case.	Average Price per Piece.
300 Toilet at	9d.
250 " "	1/-
200 " "	1/6
160 " "	2/-
140 " "	2/6
120 " "	3/-
100 " "	3/6
90 Medium Bath	4/6
80 " "	5/6
72 " "	6/6
60 " "	7/6
45 Large	8/6
30 " "	10/6

HONEYCOMB.

Toilet & Bath.

Good 2nd Quality.

Pieces in Case.	Average Price per Piece.
270 at	6d.
180 " "	9d.
170 " "	1/-
160 " "	1/6
140 " "	2/-
120 " "	2/6
110 " "	3/-
90 " "	3/6
80 " "	4/-
75 " "	4/6
70 " "	5/-
65 " "	5/6
60 " "	6/6

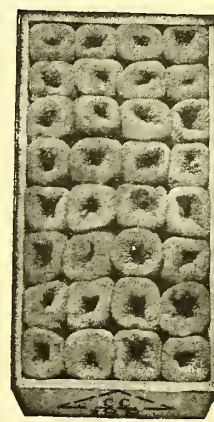
FINE TURKEY

SOLIDS.

SELECTED SHAPES.

1st Quality.

	Average Pieces Price in per Case. Piece.
Nursery	200 at 1/-
Toilet	150 " 1/6
"	100 " 1/9
"	100 " 2/-
"	80 " 2/6
Bath	50 " 3/-
"	36 " 4/-
"	24 " 5/-



LOOSE GOODS DEPARTMENT.

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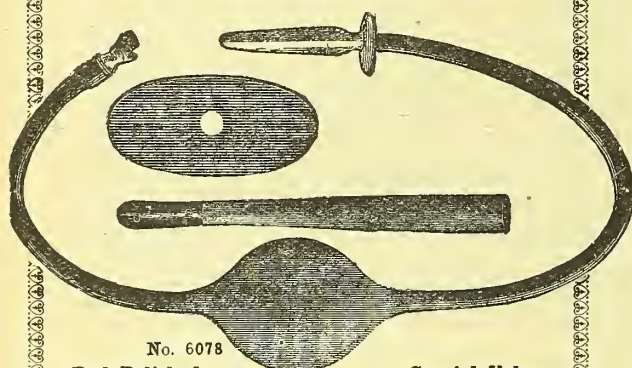
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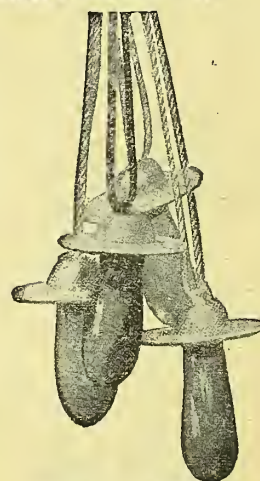
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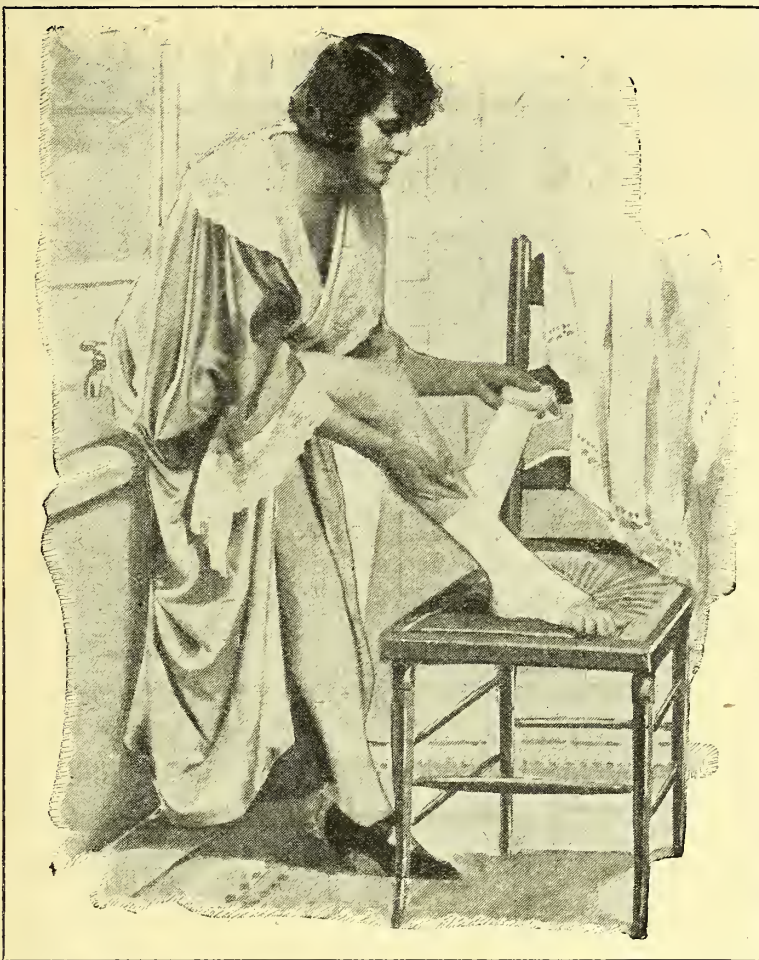
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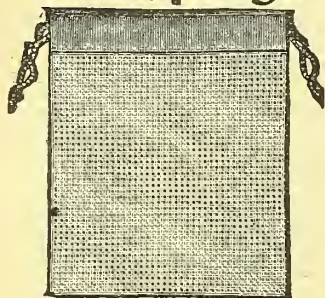
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"	helmet shape, red rubber, lined band	"	16 6	18 6	22 0	24 0	27 0	30 0
"	helmet shape, red rubber, lined band	"	16 6	18 6	22 0	24 0	27 0	30 0
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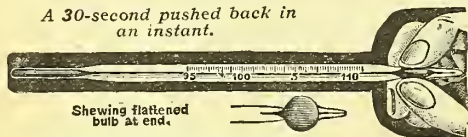
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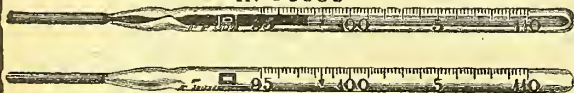
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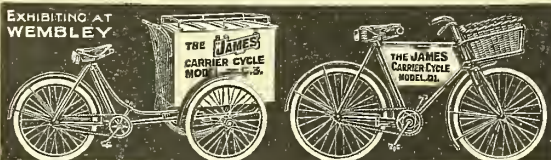
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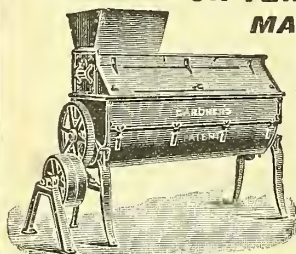
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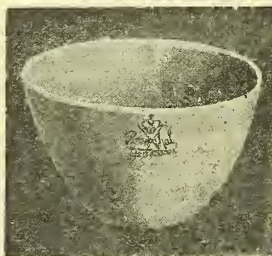
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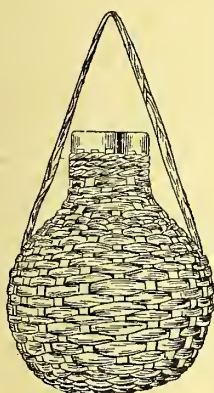
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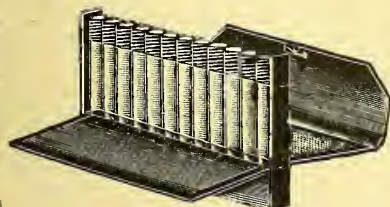
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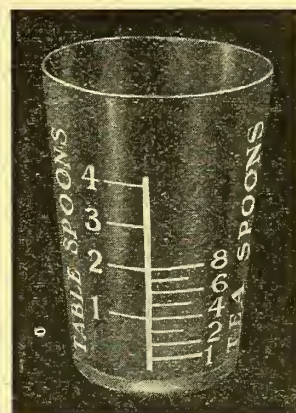
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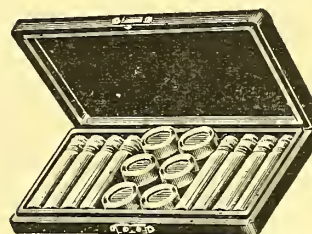
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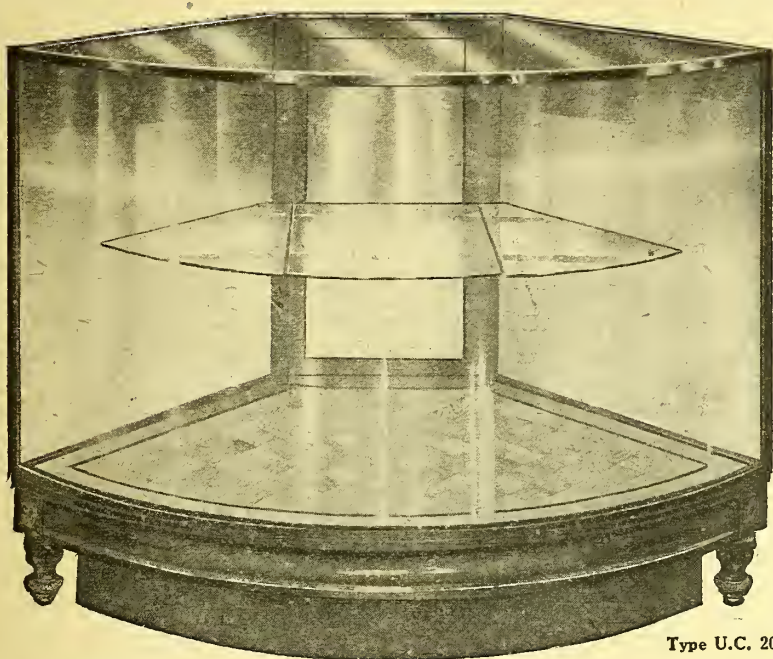
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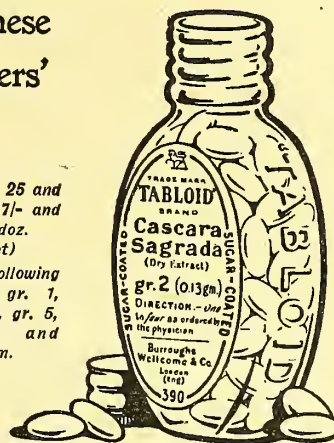
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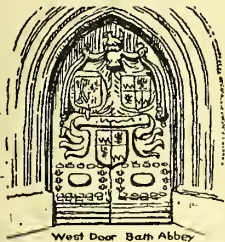
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CONFERENCE NUMBER

JULY 26, 1924

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Arms of Bath

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Wills

MR. JOHN GEORGE BRIGHAM, Ph.C., 14 Leeds Road, Windhill, Shipley, who died on March 9, intestate, left estate of the gross value of £2,172 19s. 1d., with net personality £1,063 1s. 10d.

MR. EDWIN ABRAHAM MORGAN, chemist and druggist, 12 High Street, Royston, who died on May 28, left estate of the gross value of £3,100 19s. 3d., of which £1,764 15s. 5d. is net personality.

MR. BERNARD FREDERICK LAPORTE, The Bungalow, Harpenden, governing director of B. Laporte, Ltd., who died on May 19, left estate of the gross value of £76,637 14s., with net personality £71,764 7s. 10d. Probate of his will has been granted to the Public Trustee.

MR. EDWARD ANSTEE TURNER, chemist and druggist, Travancore, Warltersville Road, Crouch Hill, London, N., who died on April 24, left estate of the gross value of £4,237 1s., of which £3,791 19s. 10d. is net personality. Probate has been granted to his sons, Dr. Percy Edward Turner, M.D., and the Rev. Charles Hedgman Turner, St. Edward's House, Great College Street, London, S.W.

REGIONAL DESIGNATIONS.—The French Committee of Medicinal Plants calls attention to the fact that lime flowers, probably of Czecho-Slovak origin, described as "Carpentras," are being offered to French buyers by foreign firms. The Customs authorities point out that should such a French designation as "Carpentras" appear on the packages, the goods can be refused entry into France under the law of 1892. A

English and Welsh News

The Editor would be obliged if subscribers will send him marked copies of newspapers containing items of interest for insertion in this or other news sections.

Poor-Law Dispensers' Remuneration

At the last meeting of the St. Pancras Guardians the Hospitals Committee recommended that Mr. G. W. Gibson, dispenser at the St. Pancras Hospital, be appointed dispenser at the Highgate Hospital, with his present salary and allowances, viz., £350 per annum, £10 per annum for panel insurance, and £40 per annum as radiographer, in place of Mr. J. F. Turner, resigned. Dr. Gregg: Why do we pay £10 a year for dispensing for panel patients? The Clerk: It is for the treatment of our officers who are panel patients. We get the money refunded from the Insurance Committee. Dr. Gregg: Why not put the exact amount; it must be next to nothing. The Clerk: I am not aware how the figures were arrived at. It is some years ago. The charge is for the resident officers who are panel patients. On the motion of Mr. Escott the report was referred back.

Poisonings

The West London coroner held an inquest, on July 15, on the body of Caroline A. M. James, Cathnor Road, W.12, whose death was due to drinking a solution of mercuric chloride. The bottle produced bore the words "Poison—Vermin Destroyer—Not to be taken" on the label. Mr. John Davies, chemist and druggist, Kilburn, said the writing on the label was his. He did not actually remember selling this bottle. It was a solution of perchloride of mercury and hydrochloric acid with water. The coroner recorded a verdict of "Suicide while of unsound mind."

An inquest was held at Salford, on July 22, on three boys, less than ten years old, who died as the result of swallowing pills obtained from a doctor's cellar. From the evidence of the mothers of the dead boys it appeared that they were in their accustomed robust health when they left home to enjoy themselves after tea on Thursday last, and when they returned later in the evening they did not complain or betray any symptom of illness. They are the sons of different parents, and went to bed in their respective homes as usual. About 11.30 p.m. the same night the mother of one of them named Chapman heard moans, and, going to her son's bedroom, she found her boy "apparently asleep, but sobbing." Unsuccessful attempts were made to rouse him, and two hours later he was removed to the local hospital. When another of the lads got up about 8 o'clock the next morning, intending to dress for school, he called to his mother that he could not walk. He was carried downstairs, and later taken to the hospital, as also was the third boy, living a door or two away, who was found to be unconscious. All the three died during the day. The previous night, it appeared, they persuaded a younger companion, a little fellow not five years old, to get down a grid into the cellar of a doctor in Regent Road. Presently he emerged, carrying a small bottle containing pills. From the evidence of George Henry Wilde (13), who met them a little time

afterwards, all the deceased swallowed some of the pills. Wilde said that one was given to him, and when he found that it had a bitter taste, he threw it away. Then one of the dead lads said to him, "This is the way to swallow them," and he put some in the palm of his hand, which he raised to his mouth, and swallowed the pills. It had been earlier stated in an interview with the doctor whose cellar had been entered that the pills were not in his stock, but the bottle must have been left there by his predecessor whom he succeeded about four years ago. He thought all the useless drugs had been cleared from the cellar, but this particular bottle must have escaped his notice. Mr. G. Steven, Ph.C., who gave evidence, said he had analysed one of the pills that had been found; it contained one-eighth of a grain of morphine hydrochloride, and, in his opinion, one grain, equalling eight pills, would prove a fatal dose for a boy. He added that the bottle containing six dozen pills was supplied by him to the doctor formerly practising at the surgery about December 1918. The hospital doctor said that death was due to heart failure following upon morphine poisoning. A verdict of "Misadventure" was recorded.

Contracts

The following tenders have been accepted by the bodies named:—

Eastbourne Guardians.—C. Harmer & Son, drugs.
Stockton-on-Tees Guardians.—T. W. Salmon & Son, drugs.

Birmingham

Local claims for admission or restoration to the electoral list should be made before August 11.

Shoplifting still continues in the city, in spite of heavy fines and threats of imprisonment without the option.

Alfred Bird & Sons, Ltd., manufacturing chemists, have secured land for conversion into a sports ground for their employees.

A very large number of awards for suggestions, varying from 2s. 6d. to £30, was made to the employees of Cadbury Bros., Ltd., at their half-yearly party.

Birmingham Corporation gas accounts can be paid into Needhams, Ltd., chemists, Monument Road, for the Ladywood District. Formerly Mr. Griffiths undertook this work.

At Birmingham Police Court, on July 21, the three men, Hickman, Jordan, and Westney, charged with being concerned in breaking into the premises of Southall Brothers & Barclay, Ltd., manufacturing chemists, Chafford Mills, Alum Reek Road, Salford (C. & D., July 19, p. 82), and stealing the sum of 24s. and a clothes brush, pleaded "Not guilty," and were committed for trial at the Quarter Sessions.

On July 20 the Birmingham and Midland Pharmacists' Motor Club held the first Motor Reliability Trial to be organised in this country for chemists only. The course was run from Birmingham, Hagley Road, to Ludlow, and after lunch from Ludlow by a *détour* to Stourport. Nearly thirty cars lined up at the start, but in spite of a steady downpour, all the cars and motor-cycles finished the course, except Mr. Stevens. Clee Hills seems to have troubled quite a lot of the competitors. Beresford in particular had to stop with his brakes on fire. Splendid performances were put up by Messrs. Atkinson, Cox, Wright, Bishop, Riley, Collins, Howes, Lindsay, Parkinson, Jardine and James. Mr. James was awarded the gold medal, Messrs. Atkinson and Parkinson (of Atherstone) being the winners of the silver and bronze medals respectively. Captain L. J. Sparke had control of the road arrangement, ably assisted by Messrs. F. Mousley, H. Holgreaves, Harris, and other enthusiasts. Nearly eighty members were present at the tea party held at the conclusion of the event at the Tontine Hotel at Stourport, all tired, very wet, but very happy.

Hull

After much discussion, it was decided in a lawsuit in the Hull County Court last week, that scales and showcases are not fixtures.

The Hull Pharmacists' Association and local branch of the Pharmaceutical Society opens its winter session on September 9 with a talk on "General Trade Topics." by Mr. F. Atkinson.

Local pharmacists are expert in analysing the causes of the present depression in trade. "Taking the kiddies to Wembley necessitates the cutting down of expenses somehow," said one chemist to the C. & D. representative, "and this is often done by sacrificing the little luxuries bought from the chemist." One luxury which does not lose its sale, however, in the poorer middle-class districts at any rate, is face powder.

Black beer, says a local paper, is chiefly used for the prevention and cure of colds, a small quantity of the treacly mixture being diluted with hot water and a little sugar, and drunk as a cordial. Very frequently a little rum is added to the concoction. But as a fairly pure malt food it is most important, and in Yorkshire households it is in demand for the feeding of weakly boys and girls, who seem to thrive on it. It is also used in cases of incipient consumption, so that really it is rather a medicine than a beverage.

Liverpool

Gillette razors of the large size are being offered in pharmacy windows at from 4s. 6d. to 5s.

Much rain has followed the few hot days. Boracic shoe socks and other pedal palliatives are in demand. A print of a man sitting with his feet in medicated water while he reads, "Ten-mile walks round Liverpool," catches the public eye in Dale Street.

During the Royal procession to the Cathedral, on July 19, films sold well along the route taken by the King and Queen between Knowsley (Lord Derby's Lancashire residence) and St. George's Hall. Generally, too, the pharmacist's business received a fillip.

Sheffield

Most of the Sheffield visitors to the Bath Conference are taking the journey by road.

Mr. J. E. Crowe, Upwell Street and Grimesthorpe Road, has commenced a camera club, somewhat of a novelty in Sheffield.

Chemists are complaining of the annoyance caused by crowds of children flocking to their shops in consequence of advertisements of free samples of certain specialities.

Mr. S. Meakin, apprenticed to Mr. G. Squire, Ph.C., Haymarket, has won a Sir Jesse Boot scholarship, tenable at Nottingham University. Mr. Meakin was the most successful student in the Sheffield Pharmaceutical and Chemical Society's prize scheme last session.

Miscellaneous

IN THE COURTS.—At the South-Western Police Court, London, on July 16, Maud Beadon, described as the widow of a chemist, was committed for trial on a charge of murdering her daughter, aged seven, and attempting to murder another daughter aged five. The accused was also charged with attempting to commit suicide; it was stated that morphine was administered in each case.

PHARMACY ACT, 1852.—In Bloomsbury County Court, London, recently, the Pharmaceutical Society of Great Britain sued Mr. J. F. Cunningham, chemist and druggist, for the recovery of a penalty of £5 under Section 12 of the Pharmacy Act, 1852, in respect of the exhibition of a certificate of membership, he not having paid his subscription to the Society for the current year. Judgment was given for the plaintiffs.

CHARGE OF FALSE PRETENCES.—At Trowbridge Police Court, on July 21, Nathaniel Critz was remanded on a charge of having obtained the sum of 6s. from Lily Remington by false pretences. It was stated for the prosecution that the accused had a market stall and was selling boxes of ointment purporting to be a preparation known as "Pride of London" paste for corns, the proprietors of which were a firm named Max Carl, London. Critz was at one time in their employ.

Scottish News

Brevities

A technical point on the sale of patents by motor van is the subject of discussion in pharmaceutical circles. The general view is that it is illegal, but a definite opinion would be welcomed.

At Kilmarnock Sheriff Court, recently, a man whose name was not published was fined £3 for forcing open a showcase at the shop of Mr. T. Taylor, chemist and druggist, Saltcoats, and stealing from it face powder and other goods.

Edinburgh

Glasgow and Edinburgh are both on holiday this week. Not for years have so many people left the capital.

"At this season one notes (writes a correspondent) that antique dealers, especially in the New Town, display old mortars amongst their wares."

Mr. D. P. D. Wilkie, M.D., F.R.C.S., Edinburgh, who has accepted the appointment of the Chair of Surgery, Edinburgh University, was born in Kirriemuir in 1882, and graduated at Edinburgh University, after a distinguished course, in 1904.

"There seems to be an epidemic in the matter of cutting developing and printing work prices (writes a correspondent). It is time drastic steps were taken to 'stem the tide.' In spite of cutting, the dealer who turns out good-class work is assured of a large measure of support."

Proposed new by-laws, if sanctioned by the Edinburgh Town Council, will effectively check street trading in the city. Under these regulations, street traders are prohibited from plying their business in certain selected streets, while an equally drastic clause bans them from selling goods anywhere in the city within 100 yards of a shop which deals in the same class of goods.

A meeting of the Edinburgh Chemists' Golf Club was held over Prestonfield Golf Course on July 16, with the following results: (1) J. Finlay, 79+2=81; (2) M. Stoddart, 92-10=82; (3) G. R. Smith, 99-15=84. Second class: W. Houston, 85. It is proposed to charter a bus for conveyance to Torphin for the next outing on September 3 if a sufficient number are going. Members intending to be present should forward names to the secretary before August 31.

Fifehire

Mr. F. G. Stewart, chemist and druggist, Pathead, Kirkcaldy, has a motor van on the road with sundries and packed goods.

Mr. Charles Stewart, chemist and druggist, Kirkcaldy, has been elected to a vacancy on the board of the local waterworks commissioners.

Glasgow

Mr. E. W. May (T. F. Bristow & Co., Ltd.) has removed to 23 Hartington Gardens, Glasgow.

An appreciation of Professor F. O. Bower, F.R.S., appeared recently in the "Glasgow Herald" on the conclusion of a series of popular articles on botany, of which he was the author.

The newly-appointed Professor of Moral Philosophy at Glasgow University, Mr. H. J. W. Hetherington, M.A., is the elder son of Mr. Thomas Hetherington, chemist and druggist, Tillicoultry.

Glasgow Corporation have arranged to hold a Domestic Welfare Exhibition in the Kelvin Hall during the three weeks commencing October 13. It will be run on the same lines as the former Housing and Health Exhibitions.

Mr. Hector J. W. Hetherington, M.A., Principal and Professor of Philosophy in the University College of the South-West of England, who has been appointed to the chair of Moral Philosophy in Glasgow University, is a son of Mr. Thomas Hetherington, chemist and druggist, Tillicoultry.

Irish News

Brevities

At a recent meeting of the City of Cork Technical Instruction Committee, the following tenders were accepted:—For chemicals, the Lennox Chemicals, Ltd., Mary Street, Dublin, at £22 17s. 7d.; for chemical apparatus and physical apparatus, Joseph Maihen & Co., Westmoreland Row, Dublin, at £20 11s. 5d. and £20 19s. 9d. respectively, for the two items.

Londonderry Wine Licences Claims

At the Londonderry tribunal to determine claims to compensation under the Northern Ireland Intoxicating Liquor Act, 1923, judgment in chemists' claims was delivered, as under, by the chairman, His Honour Judge Osborne, K.C., Recorder:—Geo. W. Lawson, Ltd., Limavady, £300; W. A. Murphy, Limavady, £110; A. Templeton, Garvagh, £104; R. F. McCartney, J.P., Coleraine and Portstewart, £420; John Simpson, Dungiven, £195; Martha Smith, Kilrea, £35; Samuel S. Badger, Magherafelt, £80; Robert Smith & Co., Foyle Street, Londonderry, £735; Thomas McCully & Co., Ltd., Water-side, Londonderry, £95; Hubert Sweeney, Strand, Londonderry, £125; H. M. Kelly, Duke Street, Londonderry, £205; R. Blair, Foyle Street (trading as Mortimer & Co.), £605; H. E. Young, Strand, Londonderry, £218; John Maxwell (trading as Prior & Co.), Ferryquay Street, £125; J. Kilpatrick (trading as R. A. Austin), The Diamond, £630; T. A. Crooks, Spencer Road, Londonderry, £65. During the hearing of the claims, Mr. J. E. Warnock, B.L., who represented a number of applicants said: There was nothing in the Act to prevent a chemist refraining from taking out a restricted licence, coming to that court and getting full compensation, and then going home and taking out a licence. The Recorder (chairman) said he would be very much surprised at the northern legislators if such were the case. Mr. Warnock: The more you see of this Act the less you will be surprised. The Recorder: I am very much surprised.

Belfast

Hugh Marshall & Co., Mill Street, Belfast, formerly of York Road, druggists, are opening a retail branch in Victoria Street, Belfast.

Mr. T. W. McMullan, M.P. (Thomas McMullan & Co., wholesale druggists), had the honour of being presented to the Duke and Duchess of York in his capacity as a Harbour Commissioner, on their arrival in Bangor, on July 19. Councillor Mr. McDonald, M.P.S.I., was presented with the members of Belfast Corporation, on July 22.

At a meeting of the Senate of Queen's University, Belfast, on July 17, a letter was read from a firm of solicitors stating that the executors of the late Right Hon. J. C. White purpose handing over to the University £60,000 on trust for payment of the salary of a professor of bio-chemistry of at least £800 a year, and also in paying a professor, reader or lecturer a yearly salary of at least £450, and as to any balance, for any purpose for the benefit of the bacteriological department. The executors desire the name of the deceased to be associated with the gift as follows: "The John C. White Professorship in Bio-Chemistry," and "The John C. White Lectureship in Bacteriology." It was resolved to accept the offer.

Belfast pharmacies on the line of route of the Royal procession when the Duke and Duchess of York visited the town on July 21 and 22 were in many cases handsomely decorated. At Camswater Mr. J. C. Culbert's pharmacy was gay with streamers and flags, the whole being surmounted by an inscription across the entire building, "Ulster greets her Royal House." In Royal Avenue C. & J. Montgomery's pharmacy was gaily decorated in red, white and blue, and other establishments embellished included those of Davidson & Hardy, Castle Place, and I. W. Nicholl, High Street; the pharmacies of Mr. Houston Todd, Holywood Road; Grattan & Co., Corn Market; J. A. Bingham, Donegall Place; A. Gibson, Donegall Place were also tastefully decorated.

Legal Reports

Dangerous Drugs Act Cases.—At Maidstone, on July 15, Grace Wells was charged with unlawfully attempting to obtain cocaine contrary to the Dangerous Drugs Acts Regulations. Mr. James Norrie, chemist and druggist, 69 Tonbridge Road, Maidstone, stated that on May 28 defendant came to his shop and asked for cocaine. She had no prescription, and witness refused to supply any. Defendant said that at the time she was under the influence of drink, and did not know what was asked for at the chemist's shop. The Bench imposed a fine of £5.—At Grimsby Police Court, on July 18, Osmond & Son, Ltd., manufacturing chemists, were summoned for having failed to comply with the terms of a licence under the Dangerous Drugs Act. Mr. G. R. Faling, on behalf of the Director of Public Prosecutions, stated that when a Home Office inspector visited the defendants' premises and asked to see their "dangerous" drugs, he was taken into a dark room and shown 14 lb. of opium lying in tins and parcels on shelves. The conditions of the licence were that the stocks should be in charge of the licensee or a responsible servant, and (except when in actual use) kept under lock and key. The door leading from the laboratory to the dark room was unlocked. Arthur Henry Anderson, the inspector referred to, said that some of the opium was in paper parcels and some in an unopened tin. Some balls of opium had been wrapped in paper and left on the shelf. Mr. W. H. Coates, for the defendants, called Mr. D. Marshall, their head chemist, who said that ordinarily the drug room was kept under lock and key. The opium was now locked in a cupboard fitted with a special lock. None of the workpeople had access to the laboratory. The stipendiary magistrate said he could view the matter more leniently than if the conditions were the same as in London and other large towns. He imposed a fine of £5 5s., with £5 5s. costs.

Sulphur Ointment.—At Birmingham, on July 18, Mr. Arthur William Beresford, chemist and druggist, 414 Nechells Park Road, was summoned under Section 6 of the Sale of Food and Drugs Act for selling sulphur ointment not of the nature, substance and quality asked for by the purchaser. Mr. W. R. Neave, for the Corporation, stated that the sample bought contained 19 per cent. sulphur and 81 per cent. of paraffin base; whereas the ointment of the British Pharmacopœia consists of 10 per cent. sulphur and 90 per cent. benzoated lard. The assistant stated that nine out of every ten customers preferred the stronger ointment, though she did not suppose the public knew what B.P. meant. She herself did not explain what it signified, but this would be indicated when customers were asked which ointment they wanted. The B.P. sulphur is 4d. per oz. and the sample sold was 3d. per oz. Evidence of the analysis was given, the City Analyst stating that benzoated lard, being an animal fat, was to an appreciable extent absorbed by the skin, but a paraffin basis, being mineral fat, was not. In 1898 the leading medical authorities considered that 20 per cent. sulphur was too strong, and it was accordingly reduced to 10 per cent. Of nineteen samples taken in Birmingham eighteen were found correct. Benzoated lard cost about twice as much as a paraffin basis, and about five times as much as sulphur. Defendant, in evidence, stated that both his father and grandfather were chemists, and sold a similar article. He considered that sulphur ointment with a vaseline basis was, if anything, a better article; it was harmless in itself, and being used with sulphur as a skin dressing was efficacious in that it took longer to absorb and retained the medicament on the skin surface for a longer period. Doctors used a tremendous lot of this vaseline in such compounds, much more than benzoated lard. Petroleum jelly was certainly cheaper, but the question of price did not enter his mind. Mr. Neave cross-examined, and asked whether defendant backed his opinion against medical authority as expressed in the B.P. as to the amount of sulphur which was desirable. Witness did not, but said many people preferred the stronger ointment, and vaseline was commonly used. If the ingredients used to include 20 per cent. sulphur, why did the medical profession allow it? Mr. Neave put it

that medical science had developed, with which witness agreed, but added that in America the minimum was 15 per cent. sulphur. It was explained that in hot climates the B.P. allowed for benzoated lard to be employed with less soluble or absorbent substances like beeswax, etc., but Mr. Neave pointed out that the proportions must be maintained. Mr. Pritchard contended that defendant had served a better article which served the purpose in view, urging that the vaseline was a pure article with an emollient action and was sweeter than benzoated lard, which might turn rancid. Mr. Neave suggested that defendant by selling a cheaper ointment prejudiced other chemists retailing the B.P. article. Defendant replied that people wanting the B.P. ointment could get it anywhere else. The Bench held that a technical offence had been committed, but did not deem it desirable to record a conviction, and dismissed the case with costs, the chairman expressing appreciation of the way in which the defendant's solicitor had put the case and the manner in which defendant had given evidence.

Sale of Helonias Compound.—At the Greenwich Police Court on July 18, before Mr. A. J. Tassell, Edward Richardson, 14 Woodlands Street, Hither Green, Lewisham, was summoned for supplying or procuring "a poison or other noxious thing," helonias compound, knowing that it was intended to be used or supplied with intent to procure miscarriage. Mr. Pugh prosecuted for the Public Prosecutor, and Mr. Scard held a watching brief for the chemist who sold the article. Mr. Pugh said defendant bought the compound at the shop of a Mr. Poole, as alleged, with intent to procure abortion. The mixture was not used by the woman, but the offence was committed in purchasing it for such a purpose. Mr. R. W. Wren, pharmaceutical chemist, of Potter & Clarke, Ltd., Artillery Lane, E.1, said his company manufactured helonias compound, containing aloes, 9 oz.; helonias, 14 oz.; tansy, 14 oz.; oil of pennyroyal, 1½ oz.; oil of cassia, 1 dram; cayenne, ½ oz.; myrrh, 8½ oz. to 1 gal. 17 per cent. alcohol. His firm supplied this to Mr. Poole, chemist, 89 High Street, Deptford. It is a mixture supplied to chemists for dispensing purposes and was used for female complaints. Mr. Wm. Poole, manager of the drug stores, 89 High Street, Deptford, said that in the course of business he sold helonias compound as supplied to him by Potter & Clarke. He supplied the bottle produced, which bore his handwriting, to a customer, but could not say to whom. The directions were to take the mixture in hot water three times a day. He could not call defendant to mind. Purchasers did not have to sign for this article. Dr. Gerald Rock Lynch, St. Mary's Hospital, said the constituents of helonias compound, as given by Mr. Wren, were approximately as follows:—Aloes, 24.6 gr.; helonias, 38.3; tansy, 38.3; oil of pennyroyal, 4½ minims; oil of cassia, ½ minim; cayenne, 2 gr.; myrrh, 23.2 gr. Helonias, tansy, oil of pennyroyal and cayenne all had emmenagogue properties, and these drugs, no doubt, were frequently taken with a view to the arrest of the condition. These drugs are not official drugs of the British Pharmacopœia, but the usual doses are helonias, 2 to 4 gr.; tansy, 5 to 10 gr. The B.P. dose of aloes was 2 to 5 gr. The directions on the bottle produced, two teaspoonfuls three times a day, indicated that 6.1 gr. of aloes, 9.5 gr. of helonias, and 9.5 gr. of tansy were intended to be taken at each dose, very much in excess of the dose prescribed by the B.P. In some women the use of the compound would be likely to bring about an abortion. To a pregnant woman this preparation would be noxious, and some authorities held that it should not be given at all to a pregnant woman. Mary Elizabeth Oakley, an inmate of Woolwich Poor Law Institution, said she met defendant in June, 1922, and used to walk out with him. Improper intercourse took place on three occasions. She told defendant of her condition, and wrote to him in April last. She met him by appointment on April 15 at Lewisham, and his wife accompanied him. They went to Deptford by bus, and defendant went into the drug stores, 89 High Street. On coming out, he gave witness a bottle similar to that produced, and asked her to take it. She took the bottle home. Mr. Tassell committed defendant for trial at the Central Criminal Court, liberating him on his own bail in £50.

New Companies and Company News

P.C. means Private Company and R.O. Registered Office.

NOAKES' SUPER-EMBROCATION, LTD. (P.C.).—Capital £500. Objects: To carry on the business of wholesale and retail chemists, druggists and dispensers, makers of embrocations, ointments, medicines, etc. The directors are: D. L. Noakes and Lt.-Commander A. L. Noakes, R.N. R.O.: 42 Drury Lane, London, W.C.2.

VAUGHAN'S PHARMACY, LTD. (P.C.).—Capital £500. Objects: To take over from R. J. Vaughan the pharmacy at 32 Strutton Ground, Westminster, S.W.1, and to carry on the business of chemists, druggists, drug-store proprietors, photographic dealers, etc. The directors are: R. J. Vaughan, Mrs. M. Vaughan, and R. N. Evans. R.O.: 32 Strutton Ground, Westminster, London, S.W.1.

ALFRED BISHOP, LTD. (P.C.).—Capital £75,000. Objects: To acquire the business of manufacturing chemists and druggists, carried on at 48 Spelman Street, Spitalfields, and elsewhere by Alfred Bishop, Ltd. (in liquidation), to adopt an agreement with the old company and the liquidator thereof, seal an assignment of benefit of contract to be made with W. B. Bishop and A. Bishop, and to enter into a further agreement with the said W. B. Bishop and A. Bishop; and to carry on the said business and that of oil and colour men, manufacturers of and dealers in pharmaceutical and other preparations, etc. The directors are: W. B. Bishop, A. Bishop and A. O. Bishop. R.O.: 48 Spelman Street, London, E.1.

UNITED ALKALI CO., LTD., announce an interim dividend of 5 per cent., compared with 4 per cent. at this time last year.

ALFRED BISHOP, LTD.—At a meeting held in London on July 18 it was resolved that this company be wound up voluntarily for the purpose of reconstruction. Mr. S. H. Bersey, 53 New Broad Street, London, E.C.2, was appointed liquidator.

UNITED LABORATORIES AND CHEMICAL CO., LTD.—The statutory first meetings of the creditors and shareholders of this company were held on July 3 at the offices of the Board of Trade, Carey Street, London, W.C. A statement of affairs presented showed liabilities £8,430, against assets valued at £197, and a deficiency with regard to contributories of £14,204, the issued capital being 5,537 ordinary shares of £1 each and 3,481 managerial shares of 2s. 6d. each. Mr. G. D. Pepys, official receiver, reported that the company was formed in March 1921 with a nominal capital of £10,000. The promoter was Mr. Moss Jay, who became life governing director at a salary of £500 for the first year, £750 for the second year, £1,000 for the third year, and £1,500 for the fourth and subsequent years, with a commission on sales. The only sum paid to Mr. Moss Jay by way of remuneration was £79, and he was returned in the statement of affairs as a creditor for £2,567. Under an agreement the company acquired from Tele-Dis Services (Founders) Co., Ltd., the right to manufacture and sell certain disinfectants registered as Cine-Dis, Sprazone, and Aeri-Dis, and in return paid the rent of premises at 71 Blackfriars Road, and agreed to retail the products at special rates to the Tele-Dis Co. The company also entered into an agreement with Mr. Moss Jay for the purchase of his rights in Raditive, the consideration being £600, payable in managerial shares, and also a sum equivalent to 5 per cent. on the gross business in Raditive done by the company. The trading accounts for the whole period of the company's existence showed a gross profit of £4,563, but, after charging overhead expenses, a loss of £14,204. The failure of the company was attributed to heavy advertising and exhibitional costs, to the bad summers of 1922 and 1923, and indirectly to the unsuitability of the company's various products for export purposes. The liquidation was left in the hands of the official receiver.

Westminster Wisdom

By the "C. & D." Parliamentary Representative.

LANDLORD AND TENANT BILL

Mr. Comyns-Carr, on July 16, introduced a Bill to amend the law governing the relations between landlords and tenants. The Bill proposes to convert leases depending upon lives into leases fixed in accordance with the actuarial expectation of life, and also proposes to prevent the confiscation by the landlord at the end of a lease of the goodwill of a business and improvements carried on in leasehold premises. A tribunal is proposed for the adjustment of fair terms for the enfranchisement of leases and for the renewal, also for the compensation of the tenant who has erected improvements on the leasehold property in the event of the lease being terminated.

CONTRACEPTIVE ARTICLES

Mr. Wignall asked the Home Secretary, on July 17, if he is aware of the serious increase in the number of shops in London publicly exposing for sale contraceptive articles, accompanied frequently by books of an indecent and suggestive character; and if he will take any steps to prohibit or prosecute such exhibition, either at Common Law, under the Vagrancy Act, or under any other appropriate Statute, to suppress the nuisance or, if necessary, will he introduce legislation to obtain the requisite power?

Mr. Henderson replied that the police keep these establishments under observation, and report to him that there has not been any noticeable increase in their number; but any action amounting to a breach of the law will be the subject of legal proceedings.

FERTILISERS AND FEEDING STUFFS

Mr. S. Robinson asked the Minister of Agriculture whether he is aware that in a recent prosecution by the county council of Essex, under Section 6 (1) (a) of the Fertilisers and Feeding Stuffs Act, 1906, three witnesses stated on oath that they formed part of a deputation from the Retail Corn Dealers' Association which attended on the Ministry in 1921, and that on that occasion a definite understanding was come to with the Ministry that the provisions of the said Section would not be enforced if there was a label in or on the bag containing the feeding stuff giving the required percentages of oil and albuminoids contained in the Acts, etc.; whether any such understanding as above mentioned was come to on the occasion referred to; and whether the understanding is still effectual?

Mr. W. R. Smith, who replied, said he had not seen a detailed report of the legal proceedings in question. There is, however, clearly some misunderstanding as to the attitude attributed to the Ministry when the deputation in question was received in 1921. The records show that on that occasion certain suggestions were made which it was considered might assist retailers of small quantities of poultry food. It was also pointed out that new legislation would be required to meet the views of the deputation, but no ruling of the nature in question was given.

Deeds of Arrangement

Corders (John T. Corder, trading as), 31 London Street, Norwich, chemists.—Among the creditors are: W. J. Bush & Co., Ltd., £60; Hodgkinson & Co., Ltd., £62; Meggeson & Co., £64; W. Toogood, Ltd., £55.

Lucas, Elizabeth I., trading as a chemist, 38 Dunraven Place, Bridgend (Glam.). The following are among the creditors: The British Drug Houses, Ltd., £64; Barclay & Sons, Ltd., £35; Evans Sons Lescher & Webb, Ltd., £39; Houghton, Ltd., £15; Kodak, Ltd., £41; Maw, Son & Sons, Ltd., £23; Smith, Stephen & Co., £20; Cupal, Ltd., £15; Schweppes, Ltd., £32; Francis Newbery & Sons, Ltd., £199; Coleman & Co., Ltd., £21.

Pharmaceutical Society of Great Britain

Examination Results

THE following are the results of the examinations held during the present month:—

EDINBURGH

Major Examination

Three candidates were examined; the following passed:—
Craig, Agnes P., Edinburgh

Qualifying Examination

	No.	PART I			PART II		
		Absent	Referred	Passed	Absent	Referred	Passed
Entered for whole Examination ..	22	—	7	12	1	3	8
Entered for Part II and referred subject in Part I ..	10	1	3	6	1	1	3
Entered for Part I only ..	92	4	33	29	—	—	—
Referred subject in Part I only ..	32	1	8	23	—	—	—
Entered for Part II only ..	84	—	—	—	1	14	65
Referred subject in Part II ..	12	—	—	—	—	1	11
	252	6	51	70	3	19	87

Referred in one subject: Botany, 12; chemistry, 51; physics, 8; materia medica, 8; pharmacy, 11; total, 70.

PART II

The following, having satisfied the examiners in Part II, have been registered as chemists and druggists:—

Aitchison, J., Rutherglen
Aitchison, J. G., Peebles
Allan, James, Glasgow
Allan, Jeanie R., Edinburgh
Allen, J. K., Manchester
Arthur, Jean M., Glasgow
Atkinson, J. M., Newcastle-on-Tyne
Behrman, P. M., Sunderland
Berry, Ronald, Greetland
Bisset, John C., Aberdeen
Bowman, Agnes N., Anstruther
Brown, A. S., Hawick
Brown, G., New Deer
Buchanan, T. W., Leven
Burnham, T., Sunderland
Caldwell, John, Glasgow
Cameron, A. H., Braintree
Campbell, Colin, Glasgow
Carmichael, D., Glasgow
Chapman, Annie H., Wishaw
Combe, Margaret, Leith
Crowther, A., Manchester
Cruckshank, G., Insh
Dallas, J. S., Dundee
Davidson, N., Blairgowrie
Deans, J. T., Shotts
Dickinson, D. F., North Shields
Donald, Agnes E. B., Edinburgh
Duguid, Jeanie M., Auchterless
Farley, John, Dundee
Fleming, Anne McA., Paisley
Fyfe, Elizabeth, Forfar
Geddes, Barbara D., Leith
Hodgson, H., Halifax
Hough, George, Bolton
Houston, J. E., Dumbarton
Hugo, F. E., Bethlehem, South Africa
Jack, Elsie, Rothes
Joy, A. L., Whitley Bay
Keith, William, Kemnay
Lawrie, C. N., Saltcoats
Loggie, W. McK., Aberdeen
Low, Clara H., Dundee
Low, Margaret J., Montrose
Lowden, James, Keswick
McGregor, Margaret, E. Newport
Macinnes, Annie, Glasgow
McKee, J. S., Glasgow
McKenzie, J. S., Alford
McKinstry, T., Johnstone
McTavish, Annie F., Edinburgh
Mill, Marion F. W., Edinburgh
Miller, Janet G. B., Innerleithen
Murray, Dorothy, Bishop Auckland
Murray, G. N. K., Glasgow
Nicoll, W. M., Dundee
Ormiston, Robert, Alloa
Pattinson, E. B., Aspatria
Patrick, G., Consett
Powrie, A. O., Dundee

Purdie, J. C., Galashiels
Revels, David, Glasgow
Ritchie, G. B., Glasgow
Sempie, Jessie, Glasgow
Simpson, James, Keith
Simpson, T. C., Crook
Stewart, Robert, Glasgow
Stone, M. H., Glasgow
Tait, N., Glasgow

Todd, Jean K., Glasgow
Walker, S., Harrogate
Weir, Janet M., Beith
Wilkinson, J. G., Darwen
Willmsee, P. E., Bethlehem, South Africa
Wilson, J. A., Glasgow
Wood, G. A., Ilkeston

PARTS I AND II

The following, having satisfied the examiners in Parts I and II, have been registered as chemists and druggists:—

Bateman, John, Edinburgh
Benzies, H., Edinburgh
Blaikie, William, Alloa
Calder, T. B., Leith
Cassidy, Vashiti E., Liverpool
Hall, J. L., Peebles
Holburn, W. A., Scarborough
King, Thomas, Windygates
Ross, Davina, Rothes
Shearer, I. M. R., Stromness
Spence, H., Stromness

LONDON

Major Examination

Twenty-one persons were examined, and the following eleven passed:—

Bowler, Harold V. W.
Brown, Winifred
Davis, Harold
Hopson, Claude E.
Kirkwood, Catherine S.
Peck, Charles W.
Perkins, Marjorie H.
Perrins, Gordon
Raley, Reginald A.
Sweatman, Marjorie M. B.
Whalvin, William A. S.

Branch Meetings

Exeter.—The annual meeting of the Exeter branch was held on July 16, Mr. W. J. Shepperd presiding. Mr. P. F. Rowsell (President) was congratulated on his election as vice-president of the Pharmaceutical Society. The annual report and financial statement were adopted, and the following officers were elected:—*President*, Mr. W. J. Shepperd (Barnstaple); *Vice-President*, Mr. D. Reid (Exeter); *Treasurer*, Mr. S. S. Brown; *Secretary*, Mr. F. Southerden; *Social Secretary*, Mr. A. C. Milton; *Auditor*, Mr. W. W. Pine; *Committee*, Messrs. W. R. B. Arnold, F. E. Battershill, A. Derry, F. Dyson, G. F. L. Fisher, M. T. Foster, W. E. Hollows, W. W. Pine, P. F. Rowsell, J. H. Scott, P. F. J. Trestail and A. H. Ware. The Benevolent Fund box yielded £5, and a sum of ten guineas was voted to the Devon and Cornwall Pharmaceutical Scholarship Fund.

Recent Patents

Abstracts of specifications of recently-granted patents for inventions. The complete specification (is. each including postage) of British patents can be obtained from the Patent Office, 25 Southampton Buildings, London, W.C.2, on quoting the name of the patentee and the number of the patent.

Alkyl oxyacridines.—A process for the preparation of alkyl ethers of oxyacridines, of which the dimethyl-ether of 3,6-dioxyacridine has been found to possess a pronounced bactericidal action, consisting in alkylating the hydroxyl groups of hydroxylated acridines. (Leopold Casella, G.m.b.H. 217,715.)

Formaldehyde-Urea Compounds.—Colourless, transparent, or opaque products, easily worked on the lathe, can be obtained by heating under a reflux condenser a mixture of formaldehyde solution, urea and hexamethylenetetramine, followed by distillation *in vacuo*, and hardening the product at 80° C. (F. Pollak. 193,420.)

Collapsible Container.—A collapsible tube or other form of container in which the contents are discharged through one or more apertures in the side of the neck, the latter being provided with a screw cap adapted to cover and uncover these apertures, without the possibility of entirely unscrewing or removing this cap. (H. W. Cousins. 217,382.)

Pharmacy, Present and Future

Opening Address at the British Pharmaceutical Conference, Bath,
delivered on July 22 by Mr. EDMUND WHITE, B.Sc., F.I.C., Ph.C.

TO-DAY I propose taking as the subject of my address a general survey of the existing conditions of pharmacy, to trace the processes of evolution which are going on, and endeavour to suggest how these changing conditions can best be met. It is evident that changes in methods of medical diagnosis and treatment must produce consequential changes in materia medica and the practice of pharmacy. Pharmacy, as our grandfathers knew it, was a comparatively simple matter and dealt with the preparation and administration of raw material mainly from the vegetable kingdom. Within the last few years the materia medica has been enriched by a large number of synthetic substances, whose properties in many cases have not yet been thoroughly investigated. There is also a large class of animal products consisting of gland extracts, serums, vaccines, etc., for the preparation of which no pharmaceutical laboratory, in the old sense of the word, is equipped. On the one hand we see the medical curriculum crowded more and more by new subjects and the period of study increased from time to time. Nevertheless, even now the medical curriculum has little reference to many of these newer methods of diagnosis or treatment, and they form small part of the equipment of the general medical practitioner. So far as pharmacy is concerned, the curriculum has also not been adapted to meet the requirements of this newer materia medica, which remains a sort of "no man's land" between medicine and pharmacy. At the present time there is no class of man specially equipped for dealing with this particular territory, and there is no training or qualification specially adapted for the purpose of dealing with it.

THE PARTING OF THE WAYS

To-day, it appears to me, pharmacy must take some definite decision. Will it elect to endeavour to undertake this new work, or will it be left for others to do—perhaps someone with a new qualification? The decision will be a momentous one, for it may determine whether what we call pharmacy is to remain as our forefathers left it or whether it is to adapt itself to the changing conditions and prove itself worthy to keep abreast of the times and even to assist in the elucidation of many of the newer problems. The Pharmaceutical Society has in recent years made some tentative efforts to explore

this new territory between medicine and pharmacy, but, at the rate at which things are moving to-day, the Council will have to decide shortly whether it will boldly go forward or whether it will be content to remain in the background so far as the newer developments of materia medica are concerned. It is no matter for surprise that the changes and developments in medical and pharmaceutical practice outstrip our efforts to over-

take and regulate them. Legislation is always leaden-footed and laboriously follows, treading the furrow ploughed by the conditions it is intended to remedy. We must therefore, be prepared to follow, and attempt to control and regulate the conditions brought about by antecedent developments. This by no means excludes the use of intelligent anticipation; but for the most part we must be content to deal with affairs as they already exist. We must have no delusions concerning the participation of pharmacy in the developments foreshadowed here. We must earn the right to participate, and I claim that we have an *a priori* right to consideration. I hope that from the medical side we shall receive encouragement and that means will be found to bring about an agreed scheme for dealing with the situation. The Pharmaceutical Society will not desire to trespass upon medical practice; it should clearly express its readiness to make the essay only on principles of friendly co-operation, which can be mutually acceptable and advantageous to both professions.

To-day the indication should be all in favour of the pharmacist undertaking this work, because the nature of his calling, his training, his education, and examination all go to make him the man who can most easily adapt himself to the changing conditions and most easily undertake the new work with the greatest possible chance of success for the public and the professions.

SOME SIGNS OF THE TIME

Let us now consider some signs of the time. In 1919 the Ministry of Health set up a "Consultative Council on Medical and Allied Services" to advise what steps should be taken to organise medical treatment for the benefit of the whole community, and not having regard to any particular section of it. This Council consisted of a number of eminent medical men assisted by a few laymen, one of whom was our secretary, Sir William Glynn-Jones. In October 1919 the Consultative Council

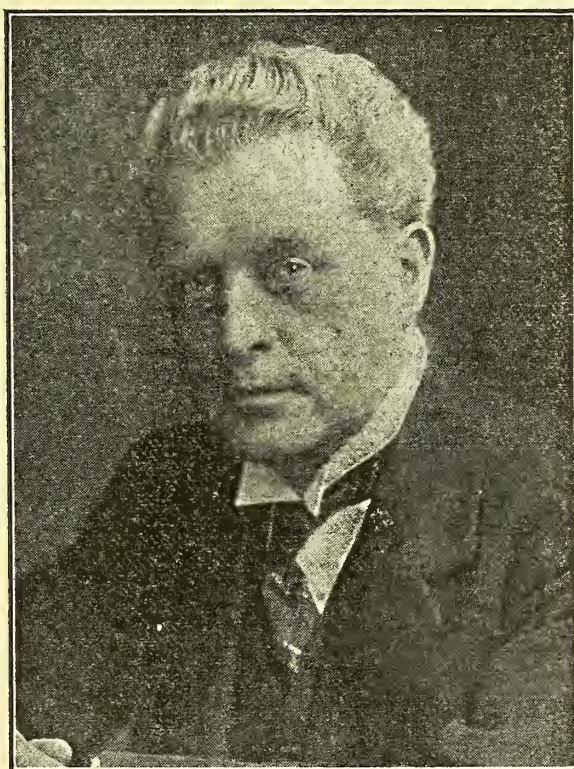


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[Blake Studios

MR. EDMUND WHITE,

Chairman of the British Pharmaceutical Conference

was asked "To consider and make recommendations as to the scheme or schemes requisite for the systematised provision of such forms of medical and allied services as should, in the opinion of the Council, be available for the inhabitants of a given area." After a very exhaustive discussion of the whole subject they issued a provisional report in 1920, which was submitted to the Ministry of Health, but has not yet taken a concrete form so far as its findings were concerned. In this report the Council foreshadows greater State provision both in preventive and curative treatment, commencing with treatment at home and passing through primary and secondary health centres, and ending with highly equipped hospitals, at each stage requiring specialised arrangements for diagnosis and treatment, and at each stage the equipment became more complete so as to render one or other part of the scheme competent to deal with any problem arising. In this report the following paragraphs occur dealing with laboratory services:—

Primary Centres.—At each primary centre would be a laboratory, of which the first and essential function would be to give facilities to the general practitioner himself. It would be equipped so as to enable him to make personally any examinations which fell within his scope and desires. The equipment, which would be supplied from the secondary centre, would have to keep pace with any increase in knowledge, skill, and interest that might be displayed by the practitioners concerned.

It is clear that some assistant would in all cases have to be in charge of such a laboratory, but the nature of his qualifications might vary with the size, geographical situation, and special needs of the centre. At the smallest centres the part-time services of a moderately skilled attendant might be sufficient. At larger centres assistants with more training would be provided, and it is a matter for consideration whether, in certain cases at any rate, such individuals might not combine the duties of the pharmacist with those of the laboratory assistant. At the largest primary centres two assistants might be required, and it would be desirable that the senior of these—especially at centres farthest removed from a secondary centre—should be able to report, at least provisionally, in cases of urgency—as, for instance, when diphtheria is suspected.

It would be well if those who work at the primary centres were, as a matter of routine, to spend occasional periods at the laboratory of the secondary centre for the improvement of their skill and knowledge.

This Consultative Council also considered that it would be necessary to set up a special committee to consider the position of the pharmacist in relation to this scheme, endeavouring to elucidate how his training and qualification could best be fitted into the scheme, so as to give the greatest possible scope to his services and render the scheme most effectual in operation and allocating to the pharmacist certain laboratory functions. The full report of this Advisory Council should be carefully studied by everyone in any way responsible for the future development of pharmacy, because its bearing foreshadows the trend of medical thought, and in some form or other appears to meet the conditions of affairs most likely to obtain in the next few years. The report clearly recognises many of the difficulties which have to be faced in giving effect to their proposals, and particularly recognises that it will not be possible for the local general practitioner to carry out the methods of diagnosis and the preparative operations thereof by his own hands; and even when it comes to the smaller hospitals, there is need for some specially trained person to do this work, if the most recent development of diagnosis and treatment are to become available for every member of the community. It appears to me that the findings of the Council already quoted indicate a clear opening for pharmacists if they wish to take advantage of it, and to fill the gap now existing in any such scheme of laboratory operations.

THE THERAPEUTIC SUBSTANCES BILL

Within the last few months the Therapeutic Substances Bill has been before Parliament, and though it is not likely to pass into law during the present session, there is no doubt a Bill of this nature will shortly pass into law. We must, therefore, carefully study the conditions of the Bill and see in what way we can take advantage

of its provisions. At the present time there is no public authority specially charged with the examination and standardisation of remedies by physiological or biological methods. There is no public laboratory where any firm or person inventing a new remedy can have such substances tried and examined, nor is there a laboratory where a pharmacist making his own preparations can have them examined by physiological methods to determine their potency. I would put forward a principle that, however pharmacy may change, the pharmacist must change with it, and I further maintain that the duty of the Pharmaceutical Society is to follow the developments of pharmacy wherever they may tend and to take an interest in every man and in every place where pharmacy is practised, whether it be in the retail shop, in the hospital, dispensary, in the chemical or drug factory, or in the laboratory. The Society must provide that however far the *materia medica* may vary from the nature and kind hitherto demanded, they must take the necessary measure to equip the pharmacist for dealing with the change. Even to-day, and still more will it be so in the future, the substances in ordinary and everyday medicinal and surgical use are not covered by a syllabus of chemistry, botany, pharmacy, physics, and *materia medica* as formerly defined. Is it not possible to foresee the Pharmaceutical Society recognised as the suitable public body to be put in charge of such work as is contemplated by the Therapeutic Substances Bill? At any rate, the Council should carefully explore the situation before the territory is staked out and the opportunity lost. It is a composite land, and no professional body at present can deal entirely with it without modification, and certainly extension of its functions and activities. To me, the possibilities for pharmacy are evident, and an effort should be made to keep in line with the requirements of the present and, no less, the future.

FAR-REACHING EFFECTS OF THE TEST CASE

The decision of the case *Jenkin v. the Pharmaceutical Society* is likely to have far-reaching effects in our calling. It has enabled the Pharmaceutical Society to shed some of the functions it was endeavouring to fulfil, and which have now been passed on to another body, the Retail Pharmacists' Union, who, I believe, are very efficiently carrying out their duties, and with whom I hope the Society will always be on terms of friendship and concord. Those who follow the Council reports, and particularly those who are members of the Council, will know that the Society has plenty to do even though it has entrusted trade matters, and very important matters, to another organisation. I am satisfied that we have done well in this division of labour, apart from any opinion as to its expediency; and we are fortunate in seeing the change effected so smoothly and the responsibilities we have shed taken over by a friendly body created out of our own loins, and with whom I trust we shall always work in friendly and loyal co-operation. Having regard to the amount of work done by the Council of the Pharmaceutical Society at the present time, I sometimes wonder how we could have hoped to cope with the present work and that which has been passed on to the other body. The change has certainly left the Society freer to pursue the main objects contained in its Charter, feeling content that the functions it has abandoned are in safe hands. These functions which have been shed, although not altogether contemplated perhaps by the founders of the Society, are nevertheless of the highest importance to pharmacists, and must not be neglected. The Society is, however, now freer to devote its energies to the technical and professional side of pharmacy, and it should neglect no opportunity of rendering pharmacy useful to the community by adapting its educational course, its examination, and its research work to fit the needs of the time in which we live. It may need much courage to undertake a programme which appears to be demanded by the present state of affairs, but the Council will not be fulfilling its duties to the pharmaceutical community unless it explores the ground very thoroughly and is

prepared to devote its ample resources to maintaining the position of pharmacy amongst the professions, and, if possible, of advancing its importance.

THE IMMEDIATE AFFAIRS OF THE CONFERENCE

And now, to turn to the immediate affairs of the Conference. It is now two years since the British Pharmaceutical Conference, meeting in Nottingham, decided to adopt the scheme under which the annual meeting of the Conference became a part of the Pharmaceutical Society's business, and the Council of the Society undertook the responsibility of organising the meetings and of retaining the essential features of the old Conference meetings. I would like to-day to review the situation, to see how far we have been able to carry out our expressed intentions, to consider what—if any—modifications of the scheme can be applied to secure and extend the usefulness of the Conference. I feel that I must accept responsibility in this, because I was one of the protagonists for the amalgamation proposals. Having held offices in both the Society and the Conference I was convinced that the change would be beneficial to both parties, while respecting and appreciating the doubts and fears expressed at the Nottingham meeting and elsewhere concerning their wisdom. To-day, with our experience of two meetings under the altered conditions, I am going to say that I have no doubt concerning the future of the Conference, no doubt that it can be improved, and no doubt that the essential characters of the former-time Conferences have been and should be retained. The London meeting may not have been considered typical of Conference meetings; the Bath meeting is; and if this meeting continues as it has begun, the case is proved. The Executive Committee has been continued almost without change, except that it now reports to the Council as the body ultimately responsible for the Conference, and the Council appoints four of its members. The position of the chairman is not without difficulty—or might not be, unless the spirit of co-operation is exerted between the President of the Society and the chairman of the Conference. This, however, does not remove the necessity of some reconsideration of the situation created by the new conditions, always and entirely with a view to the ultimate benefit of the Conference and the Society. The functions of the Local Committee continue as heretofore, with the added advantage now of active assistance of the Society's headquarters staff. I will leave the Bath Local Committee to tell you what value they attach to this assistance. The position of former Conference members who were not eligible for membership of the Pharmaceutical Society has been regularised by electing them as corresponding members of the Conference, and on behalf of the Council and the Executive Committee I offer these corresponding members a cordial welcome to take part in each and all of our Conference functions, excepting only those pertaining to the internal affairs of the Society, but including every feature of the former Conferences to which they were admitted. The "Year-Book" has been continued, but in an extended form, and now includes much information formerly contained in the calendar of the Society.

THE CONFERENCE OF DELEGATES

The outstanding change in the Conference is the meeting of delegates from the Society's branches. The constitution of the delegates' meeting and the subjects and nature of the discussions taking place thereat recall to me the meetings of the Local Associations Executive, which were inaugurated during the time I held office at Bloomsbury Square. And no simile could be more promising. Many members here to-day will confirm my opinion that the L.A.E. meetings were extremely beneficial; they were instructive to your Council, they led to a better understanding between governors and governed, and the instinct of such meetings always assesses, at about its true value, the stormy eloquence which is sometimes built upon defective information or unsound premisses. We may expect at Conference meetings from one hundred to one hundred and fifty such delegates

from the branches, and the Conference affords the best opportunity for their meeting. It has been the custom, and I hope it may continue, for the Conference to meet in various towns and cities. Thus each part of the kingdom in turn has the opportunity of easy access to the meetings, and, for the rest, the Society by its subsidies facilitates the attendance of the delegates. I know that the Council attaches the greatest importance to the delegates' meeting, and regards it as an essential part of the present scheme of organisation. At such meetings we shall make the personal acquaintance of members who, by their showing, will be marked down as eligible for official positions—for instance, on the Council and Boards of Examiners. Here all meet on common ground; here, I have no doubt, many future Presidents and future chairmen of Conference will make their first bow to a pharmaceutical audience. Come, however, with these opportunities certain difficulties to which I should like to refer. Thus, with the addition of official delegates, we shall have greater numbers at the Conference meeting. And this in no sense is to be deplored; rather is it a prime factor in the continued success of the Conference. But it creates conditions which must be faced. The beginnings of the Conference were small and modest. Continued success increased its size and influence. Town vied with town in liberality of entertainment, and thus a condition of affairs might easily arise in which such a standard of entertainment would be created only attainable by a limited number of the larger and richer cities and towns. Under former conditions, however, it was customary to find a smaller attendance of Conference members when the meeting was held in the smaller centres of population. But under present conditions, if the Conference is to fulfil its functions, no Conference should have a small attendance. Wherever it may be held, the numbers attending may place a burden upon the local pharmaceutical community too great to be borne. It is well known that, when the Conference was a voluntary body, the deficit in the entertainment fund was met by the voluntary contributions of the local members, supplemented by contributions from individuals, firms, and bodies corporate more or less closely connected with pharmacy.

TWO DECISIVE CHANGES

But the changes in the constitution of the Conference have involved two changes in its nature: first, the scope and attendance have been potentially enlarged; and, secondly, the meeting is now an official function of the Pharmaceutical Society. For both these reasons I think a review of the whole situation is necessary. The Council of the Society cannot consent to place a heavy financial burden upon its local members, nor can it consent, without loss of dignity, to local efforts being supplemented from other sources. The price paid for Conference tickets has been raised in recent years to two guineas; but, even so, the scale of entertainment has involved local committees in expenditure far beyond the amount paid for the tickets. It might be suggested that the Society should make good the deficiency in any case, but before this suggestion is explored I am going to enunciate what I consider should be the outstanding principle in all such affairs, viz., that any entertainment expenses should be self-supporting by the price paid for the ticket. Logically, this entails one of two things; either the entertainment must be limited by an agreed price for the tickets, or the price of the tickets must be varied to fit the cost. I should hesitate to consider the latter a satisfactory solution, for only the ostentatious would wish to have a free hand in such affairs. I consider the continuation of the Conference so important that nothing should be done which would render difficult the attendance of any member appointed as a delegate. And this throws us back to consider the first alternative. I was one of the honorary general secretaries of the Conference from 1903 to 1909, and during those six years was in close touch with local committees on this matter. My experience agrees with that of general secretaries before and since those years. Our efforts were always exerted in the direction of reducing the entertainment

programme. You know me sufficiently well to believe that I am never unwilling to receive or to accord hospitality. It may seem ungracious, but I am actuated only by a desire to be of service to the true interests of the Conference which has honoured me by its chairmanship this year. And I hold, as the outstanding text, that we should not expect local committees to incur any expenses beyond what can be easily raised by voluntary efforts well within their own means and resources. It may be we shall have to enact sumptuary laws like those of the early English period, forbidding the consumption of too much meat, or extravagance in banquets, or those in Scotland in the sixteenth century against extravagance in ladies' dress "to save the purses of the puir gentlemen their husbands and fathers." Or, again, like those in mediæval Venice, prohibiting ostentatious ornamentation of their gondolas by wealthy commoners. But this, perhaps, is an unfortunate example, for it resulted in the Venetian gondola becoming so sombre that Byron described it as a "coffin clapp'd in a canoe." I am certain, however, that we shall agree that we do not desire our attendance to be otherwise than self-supporting, for our hosts deserve our liveliest gratitude for their labour in undertaking our entertainment, and it is surely expecting too much that they should foot a heavy bill as well. I think a solution of the problem is to be sought in simplification, and I am sure it can be reached without risk of the Conference coming to a condition in any way resembling the description of the Venetian gondola. I am the more strengthened in my opinion, because the work of the Conference is heavier than it used to be, and most members would, I am sure, welcome a less strenuous meeting than those to which we have been accustomed. And now to refer to some of the changes which have taken place.

OTHER CHANGES

The old Conference research committee has been absorbed in the new Science Committee, which reports to the Council, and has been provided with ample funds derived from the sale of the British Pharmaceutical Codex and the chairman of the Conference is *ex-officio* the chairman of the Science Committee. This is surely a mark of confidence. The Science Committee continues the revision of the Codex, advises the Council on all scientific problems brought before it, and has already done good work in this direction. It advises the Council on matters relating to research work (having now replaced the old research committee of the Conference) and the scientific publications of the Society.

In conclusion, let me say that I think the fusion of the Conference with the Pharmaceutical Society has strengthened the professional and technical side of pharmacy. It has brought within the scope of the Society's activities many members who feel they can participate more fully in its activities owing to the new orientation of the Society's work brought about by the test case.

Each excursion arranged for the ladies (but likewise participated in freely by the sterner sex) seemed to bring out new features of interest, and "the end of them (as the Mayor reiterated in his addresses) was unknown." Although the same automobiles and the same drivers conveyed the parties day in day out the things seen were always different. The Wednesday morning excursion was to Corsham Court—the seat of Lord Methuen—and his lordship and Lady Methuen welcomed the Conference, gave them free run of the house and grounds and arranged for a photograph of the party to be taken in front of the house. The furniture, the armoury, the china, and particularly the pictures in this "stately home of England" were freely inspected and universally admired. The fine picture gallery was a revelation of the art treasures still stored in this country (in spite of the depredations of America), and such curious objects as a hornet's nest engaged perhaps more attention than even majolica or mother-of-pearl. Indeed, so interested were a popular and talented ex-secretary of the Conference and his party that they forgot to leave at the appointed time and kept the whole fleet of cars waiting. But Bath and luncheon were reached in good time after all.

Summer Outings

R. H. Heward's Visit to Brighton

THE annual summer excursion of the employees of the R. H. Heward Co., surgical appliance makers, Twickenham, took place on July 12, when the party, accompanied by the proprietors, left Twickenham at 8 a.m. by motor for Brighton, returning at 10, after a pleasant day. Dinner and tea were provided at the Imperial Court Hotel, on the front.

Whiffen's Staff Outing

ON July 12, the Battersea factory staff of Whiffen & Sons, Ltd., manufacturing chemists, Lombard Road, London, S.W., and the workpeople from the Carnwath Road (Geo. Atkinson & Co.), branch of the business, held a joint summer outing. The party journeyed to Brighton by road, and after lunch and a round of festivities, spent an enjoyable time by the sea.

Newport Chemists' Staff Outing

ON July 10 the staff of Clarke's Chemists, Ltd., held their annual summer outing, making an enjoyable trip by charabanc to Llandrindod Wells by way of Usk, Abergavenny, Talgarth and Builth. A halt was made on the wayside for a picnic lunch. Llandrindod was reached at 6 p.m., where tea was arranged for at the Lake Kiosk. After an enjoyable interval the charabanc was boarded at 10 p.m. for the return journey. The following day Mr. F. Clarke was presented with a silver-mounted walking-stick, suitably inscribed, to mark the occasion.

A Visit to Dovedale

THE Chesterfield and Mansfield Branch of the Pharmaceutical Society in delightful weather paid a visit to Dovedale on July 16. The Mansfield party, numbering thirty, left by motor at 2 p.m., and, calling at Chesterfield on the way, picked up fourteen more members and friends from there, going thence through Balsow and past Haddon Hall to Alsop-le-Dale. Here the party left the motors and started on their four-mile ramble through Dovedale, taking the same route as that followed two years ago by the members of the British Pharmaceutical Conference. Delight was expressed as the parties viewed the river and islands, with fine clumps of *Myosotis palustris* (forget-me-not), *Mimulus luteus* (monkey musk), and *Spiraea ulmaria* (meadowsweet). As the last steep climb out of the dale came in sight quite a number were ready to utilise the donkeys and ponies which were there to take them the last quarter of a mile to the end of the ramble; the sight of some of the leading members of pharmacy in the district enjoying a donkey ride causing a good deal of amusement and chaff, and quite a number of cameras were noticed in action. Seldom has a party of pharmacists and their friends sat down to a more welcome cup of tea than did those who seated themselves at the tables of the Peveril of the Peak Hotel. After tea the President brought forward the claims of the Society's Benevolent Fund, and also introduced for discussion one or two matters regarding the Conference at Bath. The return journey started about 8.30, home being reached shortly after eleven, the route being through some of the typical Derbyshire Dales.

SEVILLE MEDICAL CONGRESS AND EXHIBITION.—The second National Congress of Medicine is to be held at Seville from October 15 to November 5 next. The exhibition is open to exhibitors of all nationalities, but the Congress is limited to medical men practising in Spain, Portugal and South America.

UGANDA CHILLIES.—The export of chillies from Uganda in 1923 almost doubled in quantity as compared with 1922, the total being 17,169 cwt., valued at £42,914. The value, however, decreased by a little more than £1,000. The United States, Great Britain, Egypt and France were the principal countries of consignment. The increase in the trade is said to be due to removal of the export duty.

Personalities

MR. DONALD BAILEY, second son of Mr. D. J. Bailey, chemist and druggist, South Shore, Blackpool, has passed the Intermediate Law examination.

MR. W. T. SLATER, son of Mr. T. S. Slater, chemist and druggist, Burnley, has gained the degree of master of science at Manchester University.

At a meeting of the Provincial Grand Royal Arch Chapter of Kent on July 17, Mr. Alfred E. Hobbs, J.P., Ph.C., Tunbridge Wells, was appointed D.C.

MR. E. G. BRYANT, B.Sc., Ph.C., Robert Gordon's Technical College, Aberdeen, has had conferred on him the doctorate in pharmacy of the University of Nancy.

MR. B. SITARAMACHAR, of the Essenflour Products Co., Ltd., Mysore, India, sailed this week for Mysore, after a year's absence on business visits to Europe and the United States.

MR. HERBERT MERCER, son of Mr. A. Mercer, chemist and druggist, Crich, Matlock, was one of the successful candidates in the final examination for the degrees of M.B. and Ch.B., held at Sheffield University in June.

MR. MILES, manager of the instrument department of Elliott Bros., Ltd., Sydney, will arrive in England at the end of the month. He can be addressed c/o Grimwade, Ridley & Co., St. John's House, 124 to 127 Minories, London, E.1.

The poll for lay representatives, elected for three years at the Wesleyan Methodist Conference in Nottingham, on July 19 was headed by Mr. Gerald A. France, managing director of Turner & Scott, Ltd., manufacturers of 'Andrews' Liver Salt.

SIR JESSE BOOT, who is now resident in Jersey (Lady Boot's birthplace), has presented the Channel Islands Olympiad Association with a cheque for £60. This will clear off the deficit on last year's Olympic Games, and leave a working balance.

Births

Notices for insertion in this column must be properly authenticated.

DRUMMOND.—At 18 Wallace Street, Dumbarton, on July 20, the wife of John Drummond, M.P.S. (née Catherine Nicolson), of a son.

MURISON.—At Harborne, Birmingham, on July 16, the wife of J. T. Guy Murison, M.P.S. (Midland and Home Counties medical representative of J. & J. Colman, Ltd., Norwich), of a son.

TRINICK.—At Southpool, South Devon, on July 22, the wife of J. Sandrey Trinick, M.P.S., of a daughter.

Marriages

PARSONS—LIVERSEEGE. — At the Church of the Redeemer, Birmingham, on July 16, Clarence Parsons to Una, only daughter of Mr. J. F. Liverseege, Ph.C., and public analyst, Edgbaston.

SMIRRELL—BORLAND.—At Galston, on July 9, Mr. William M'Cluskey Smirrell, chemist and druggist, to Fanny Emery Borland, elder daughter of Mr. G. Borland, 29 Wallace Street, Galston.

STEVENSON—BUCHANAN.—At the Royal Arch Halls, Edinburgh, on July 16, by the Rev. William Pottinger, M.A., assisted by the Rev. W. J. Sym, B.D., Michael Stevenson, M.C., (G. F. Merson, Ltd., surgical catgut manufacturers), to Maud, daughter of Mr. Robert Buchanan, 24 Findhorn Place.

TAYLOR—LOWE.—At Christ Church, Stalybridge, on July 12, Frank Taylor, eldest son of Mr. Frederick Taylor, chemist and druggist, High Street, Stalybridge, to Elizabeth, youngest daughter of Mr. Thomas Lowe.

Deaths

CORNWELL.—At 1 Park Grove, Old Trafford, on July 20, Mr. William Annesley Cornwell, aged fifty-five. Mr. Cornwell was for many years representative of Robert Gibson & Sons, Ltd., Manchester.

EVANS.—At Northwich, on July 13, Mr. Samuel Evans, chemist and druggist, manager to Boots, Ltd., High Street, aged forty-eight. Mr. Evans served his apprenticeship to his father, a Burnley chemist. Prior to taking up his position at Northwich he had experience with James Woolley, Sons & Co., Ltd., Manchester, and during that period entered enthusiastically into the musical life of the city. His gifts in this direction found scope in Northwich, where he conducted performances of the Operatic Society. Mr. Evans's death occurred within a few hours of playing golf, and was quite unexpected. The following members of the drug trade were present at the funeral, which took place at Urmston on July 16:—Mr. J. Edmund Owen (territorial representative of Messrs. Boots); Miss Lee, Miss Southern, Mrs. Hughes, Miss Hilditch, Mr. H. Hough, Mr. J. Cross, Mr. E. Bligh, and Mr. B. Cheadle (representing the Northwich staff of Messrs. Boots); Mr. A. Birtwistle, Mr. S. M. Bostock, and Mr. H. Wallington (Northwich Pharmaceutical Association).

MATHEW.—Our South African correspondent, in sending us further details regarding the death of Mr. Frank Carlton Mathew, of Heynes, Mathew, Ltd. (*C. & D.*, July 5, p. 13), states that he was a past-president of the Pharmaceutical Society of Cape Province and was at the time of his death a member of the Southern Executive of the Associated Pharmaceutical Societies of South Africa. He was formerly a Municipal Councillor of Claremont, but had not taken a prominent part in public life recently. The funeral took place at Plumstead Cemetery, on June 26, when a large gathering, including many chemists, attended. The Associated Pharmaceutical Societies of South Africa and the Pharmaceutical Society of the Cape Province were represented by their respective Presidents, Messrs. Dale and Clancy. Mr. Mathew leaves a widow, one son and three daughters. Mrs. Mathew and one of the daughters were visiting England at the time of his death.

PITTAR.—At 7 Priory Road, Chiswick, on July 20, Sir Thomas J. Pittar, K.C.B., C.M.G., aged seventy-seven. Sir Thomas Pittar was a former chairman of the Board of Customs, and spent the whole of his career in the Customs Service, beginning at the bottom as a clerk in the Long Room. After successive promotions, he became Principal of the Statistical Office of the Board of Customs in 1889, and in 1900 was made a Commissioner. During this period he edited the Board of Trade Returns. He was appointed chairman of the Board of Customs in 1903, and finally retired in 1908.

TURNER.—At Clevedon, on July 11, Mr. John Mackenzie Turner, chemist and druggist, aged forty-two. He was formerly in business at Bristol, and in recent years he managed the business at Clevedon for Mr. H. T. Chettle.

Business Changes

W. & D. FRASER have opened a business at 18 Inglis Street, Inverness.

MR. W. CLOWES, chemist and druggist, of Thatto Heath, has opened a pharmacy at 53 Baldwin Street, St. Helens.

JOHN W. ROYLE, LTD., importers of natural mineral waters, has removed to Phoenix House, 19 Oxford Street, London, W.1. The telephone number is "Museum 1474."

The Association of British Chemical Manufacturers

THE annual meeting of the Association was held at the Chemical Society's Rooms, Burlington House, Piccadilly, W.1, on July 17. Sir Max Muspratt, Bt., occupied the chair, and in moving the adoption of the annual report said the Association has gone through a most successful and important year. He mentioned also that the general manager (Mr. W. J. U. Woolcock), not being satisfied with the small scope which the Association affords him, has become President of the Society of Chemical Industry. Much as the members of the Council felt that it was asking them a great deal to allow their general manager to devote much of his time to the other important body, it was felt that in the interests of co-operation between everyone concerned with chemical industry and chemical science, permission ought to be granted. It was hoped that the co-operation and close working together of the Society of Chemical Industry and the Association of British Chemical Manufacturers will be enormously improved. The annual meeting of the Society of Chemical Industry just concluded has been a most successful gathering. Another method of co-operation between those interested in chemistry has been afforded by the very prominent part that the Association has taken in the British Empire Exhibition. The chemical section is an exhibit second to none. It shows the complete range from the simplest domestic chemical products, through the more refined products, right away up to the pure scientific section. It is a chemical education for all who go to the exhibition. Nothing of the kind has been tried before, and no great exhibition in the future will be complete which does not carry on that idea. The cinematograph films showing various operations in the chemical industry are being shown in a number of cinematograph theatres throughout the country, and help to concentrate interest in the chemical industry. The subject of dyestuffs is an extremely difficult one, and within the Association the interests are very conflicting. The Council has tried to keep the balance between these various interests and to make representations in the right quarter for what is best for the whole industry while doing its duty by the whole of the members of the Association. Referring to the Safeguarding of Industries Act, he hoped that so far as possible the subject will be kept away from political prejudice. The Consolidated Factories Bill deserves serious consideration, and steps are being taken to see that something workable comes out as a result of the discussions which have taken place. Reference was also made to the Rating of Machinery Bill and the Census of Production is shortly to be renewed. The treasurer (Mr. C. A. Hill), in seconding the report, dealt more particularly with the balance-sheet. In the course of the general discussion that followed, Dr. E. F. Armstrong referred to the question of transport. He said that the amalgamation of the railways had so far been of doubtful benefit to the public, and he felt that it was most important that an association like their own should be very watchful of their interests on this point. Dr. Levinstein emphasised the value of the co-operation with the scientific societies to which reference had been made. Sir John Brunnner, Bt., referred to the new chemical engineering department of University College, London. The report was then adopted. In the evening the annual dinner was held at Lucullus Restaurant, British Empire Exhibition, Wembley, and was presided over by Mr. D. Milne Watson, D.L., M.A., LL.B., the newly-elected chairman.

BOTANICAL RAMBLE.—The Sunderland Technical College Botanical Society went on a ramble on July 20 to Wylam district.

TURKEY'S BAN ON MEDICINES.—Reuter telegraphs from Constantinople on July 21 that the Ministry of Health has prohibited the entry into Turkey of patent medicines, vaccines and serums unless a special permit is obtained. [The above information is belated, as full details of the new regulations appeared in the *C. & D.* of May 17, p. 698. —EDITOR.]

Trade Notes

CHEMICAL CHINAWARE is advertised in this issue by Ph. Rosenthal & Co., A.G., Marktreidwitz, Bayern (Germany).

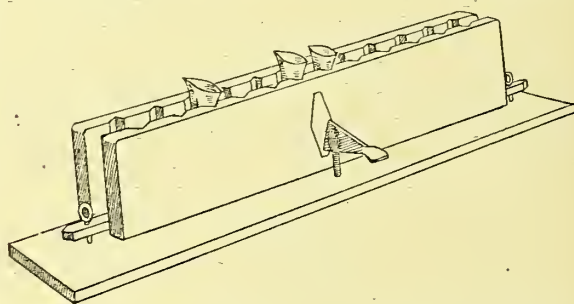
STIX-IT is the name of an adhesive packed in tubes to retail at 3d. The drug-trade sale agents are Butler & Crispe, 80-82 Clerkenwell Road, London, E.C.

A FELIX PUFF.—Williamson Bros., 126 Southwark Street, London, S.E.1, illustrate their latest creation in puffs, which has a handle in the form of "Felix the cat."

INSULIN WINDOW BILL.—Mr. J. O. Wells, 1 Manor Road, Brockley, London, S.E.4, supplies a window bill advertising insulin and Brunsdon Jeune's gluten bread. A copy will be sent on application.

SOAP PRICE LIST.—Price's Soap Co., Ltd., Lever House, Blackfriars, London, E.C.4, have issued new price lists of the various soaps and perfumery which the company manufacture. These are models of conciseness, the code number, description of the goods and packing, with illustration where needed, and wholesale and retail price, being given in orderly sequence. A separate list deals with household soap, and a circular is enclosed calling attention to the bonus offer on Olva soap.

CACHET-MAKING REVOLUTIONISED.—The new shape of cachet and novel filling apparatus illustrated below have been invented by J. Pel, Zaandam, and are obtainable from J. B. Delius & Co., Amsterdam. Before filling, the cachet is flat, resembles a finger-stall, and measures



2½ in. by 1 in. (average), the open end being somewhat larger, as shown in the sketch. The filling apparatus consists of two boards, one fixed and the other hinged, with wedge-shaped grooves arranged opposite each other, mounted on a wood base. The movable side is adjusted by a lever. Between the sides is another strip of wood for raising the cachets when filled. On placing the cachet between the furrows and adjusting the movable side, the cachet opens and can be easily filled. The lever is then moved to its former position, and the cachet again becomes nearly flat and is ready for closing. This operation is brought about by a specially constructed pair of scissors which have previously been slightly heated, the act of cutting off the superfluous portion of the cachet also sealing it. No moistening is required, there is no top to come off, and, as the cachet is nearly flat, it is claimed to be much easier to swallow.

Information Department

INFORMATION WANTED

Postal or telephone information with respect to makers or first-hand suppliers of the undermentioned articles will be appreciated:

B/217. Arthnr's Wound Lotion	B/237. Lydia. Poudre de Beanté
E/237. Chiver's Cattle Oils	B/77. Raison honey (Monti's process)
B/237. Effendi Razor Strip	B/237. Waulphar foot powder
E/217. Fngo for insect bites	E/217. Wilkinson's Natrnl Health Salts
C/237. Hyde's worm destroyer	
L/217. Metamorphosa face cream (Russian origin)	

Observations and Reflections

By Xrayser II.

The "C. & D."

has earned the right to be regarded as an expert on costing, and the article on this subject in your "Commercial Compendium" will be read with special interest. It is, indeed, of peculiar value, though its value is a little discounted for those who habitually use the *C. & D.* Retail Price List as a guide, since for them the "detail work" (or much of it) is, so you say, "already done." There is another consideration, too, which greatly lightens what would otherwise be the intolerable labour of arriving at a proper selling price for every article in a business so miscellaneous as ours. The general principles on which calculations of cost are based being accepted by the trade as a whole, prices tend to become conventionalised; and it is pretty safe, as a rule, to follow custom. The value of the *C. & D.* Retail Price List consists mainly in this—that by taking the necessity of these nice calculations out of the hands of individuals, in which they might have very variable results, it does tend to thus stabilise prices without ignoring any item of cost that ought to be taken into account. The value of this article on costing, for most of us, consists mainly, therefore, in the confidence it gives us in your List.

There is One Point

in an estimate of the cost of dispensing to which, I venture to say, sufficient attention is not generally given; I mean the time often consumed in deciphering the prescription before dispensing can begin. Not infrequently this is considerable, and more than one case has come under my observation lately in which it doubled the time spent on the prescription, one item in which might be read with equal plausibility in two very different ways. One difficulty submitted to me referred to a flavouring agent prescribed: it was simply impossible to read the script with certainty, and though the matter was not very important therapeutically, confidence in the dispenser might have been undermined by a misreading. Another difficulty occurred in the directions, and was due, not to illegibility, but to undue contraction, and, probably, bad Latinity on the prescriber's part. Here the meaning had to be guessed, the only certainty being that it could not be what the contractions used are generally understood to mean. Such difficulties as these ought not to occur; but they do so almost daily, and are not allowed for in any system of costing known to me. We pay for the doctor's carelessness, spending minutes to save him the expense of half the number of seconds. The letter of "Illegible" (not seen till after the above was written) is very much to the point.

The Advertising Conference

at Wembley has naturally brought the subject of advertisement to the fore during the past week. Many true things, and some that are at least doubtful, have been said in its praise. One of the applauded passages in Lord Burnham's speech at Wembley was rather ambiguous. The power of truth (he said) does not lie in the naked fact, but in the clothing the imagination gives it, and this is well supplied by advertisement. It is—too well sometimes—but what is meant by imagination here? If mere invention, which is what most people understand (quite wrongly, of course) by imagination, the naked truth is to be preferred in an advertisement; but Lord Burnham probably meant by it that power of framing new and striking intellectual conceptions to which we give the name of poetic genius. I am afraid this enters much more rarely into advertisement. If it were more commonly found there, his lordship's other dictum—"Advertisement is not the driving wheel of business, but it is the lubricating box"—would need revision as an understatement. The very best thing that has been said of advertisement during the week was Father "Ronny" Knox's remark in his sermon in Westminster Cathedral. Speaking of the complaint that even religion is now advertised, he said: "There is no harm in advertising religion if you take care that your goods

are up to sample." There is the truth, about all advertisement, in a nutshell. Complaint has been made that our railways do not advertise sufficiently. I should rather complain that they do not advertise in the right way. If they would advertise clean and not overcrowded carriages, proper facilities for dealing with luggage, real consideration for the convenience of passengers, punctual trains, cheap fares, no tips, quick transit of goods and parcels, and supply what they advertised—well, the railways themselves would profit as much as the public.

The Examination Results

published in your issue of July 19 present some noticeable features. The percentage of passes in Part I among those who entered for the whole examination was very much greater than among those who entered for Part I only, and nearly 14 per cent., or (reckoning those referred in one subject) nearly 29 per cent. passed the whole examination. It does not follow that it would have paid all those entering for Part I only to have gone in for the whole examination; but for some of them it probably would have paid. It is worth noting, too, that nine candidates were referred in poisons law (a subject anybody could get up with very little trouble, if its importance were but realised), thus deferring their qualification for three months and presenting the Society with a gift of twenty-seven guineas which it does not need, and which, if the candidates could afford it, had better been given to the Benevolent Fund as a thankoffering. I see that botany still keeps its bad pre-eminence as the pharmacist's *pons asinorum*. That pharmacy should run it so close in this respect is a disquieting symptom, and that so large a proportion of those referred in one subject should fail in it on a second attempt seems to show something wrong in the method of studying these subjects. Or does the fault lie in the method of examining in them?

"Recalcitrants"

is a comparatively mild term for a President of the Proprietary Articles Trade Association to apply to those who benefit by the Association's work without contributing to its cost, but its appropriateness is not quite obvious. What do these men kick against? They usually accept its prices, and they are not galled by its discipline; they simply do not contribute to its funds. The proper way of dealing with these people is not by calling them names but by arguing with them. They may have reasons of which I know nothing for their abstention. Let us ask what they are. If none is forthcoming that is worthy of consideration, we may excusably think over a few appropriate "bad words," but even then we shall do well to keep them to ourselves. If, on the contrary, plausible reasons are advanced, we must either meet them with better on the other side or admit that our case is the weaker and that these men are justified. I am prepared to agree that there may be grounds for argument on both sides.

The Debate

on the report was an interesting one. Mr. Marns spoke well from the retailer's point of view, and fully justified the demand for a 25 per cent. basis. Mr. Page Woodcock made a remark that would, I fancy, hardly have found acceptance among the speakers at the conference of advertisers at Wembley. If "heavy" advertising "hits severely the proprietary medicine owner," what becomes of the arguments they advanced in favour of advertising as extensively as possible? I do not see how to reconcile the one view with the other. Sir William Glyn-Jones spoke convincingly of the debt the P.A.T.A. owes to the manufacturer, a debt we are too apt to forget. But though it is well to recall it, we may fairly claim that the debt has been repaid, or is being repaid, with reasonable interest. Sir William admitted that we had made sacrifices in the past, but added that we make none now. It is a statement which few pharmacists will accept. We have very largely abandoned the practice of making our own specialities; we accept without demur the position of agents, an inferior one, both as regards profit and kudos, to the one we formerly occupied.

Mr. Pharmacist

In selling Baby Foods, have you considered the money you lose when you sell a food that has to be mixed with ordinary milk?

In which case the Dairyman supplies six parts of Baby's Food, whilst you sell but one part? How much better is the Glaxo way!

Glaxo gives you the opportunity of taking from the Dairyman trade which legitimately belongs to you, and you can do this with profit to yourself. At the same time you are doing a service to your "mother and baby" customers, because Glaxo is purer, cleaner, and healthier milk than the stale, germ-laden fluid that ordinary milk so frequently becomes in the hot weather.

Think it out, Mr. Pharmacist—you will agree it will pay you to push Glaxo and push it again! We will help you by sending you some new and effective sales helps.



"Builds Bonnie Babies"

Address all communications to
SALES MANAGER, GLAXO, 56, Osnaburgh
Street, London, N.W.1.

T7



ROBINSON'S
of **CHESTERFIELD**
for **CARDBOARD BOXES**
ROUND • OVAL • SQUARE • FOLDING
ROBINSON & SONS, LTD. • CHESTERFIELD & LONDON

COVER-ALL SHOPKEEPERS POLICY

One Premium — One Policy — One Renewal

A complete form of Fire, Motor &
Accident cover at special rates.

PROVINCIAL
INSURANCE COMPANY, LIMITED.

Chief Offices: { STRAMONGATE, KENDAL.
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THE HOUSE OF HOBBS



FINEST ESSENTIAL OILS
ENGLISH AND EXOTIC

MUSK, CIVET AND AMBERGRIS
OTTO OF ROSE
LAVENDER "EXQUISIA"

AGENCY AND DEPOT:

CITRUS OILS CO., MESSINA.
"SILES" Brand Lemon, Orange and Bergamot Oils.

BRUNO COURT GRASSE.
Natural Flower Oils and Concretes.

A. MASCHMEYER, Jr., AMSTERDAM.
Artificial Perfumes. Synthetic Products.

W. H. HOBBS & CO., LTD.
TRINITY PLACE, LONDON, E.C.3.
TELEPHONE: ROYAL 444 (3 LINES)

"PEPSENCIA"

"PEPSENCIA" is an ever-ready digestive fluid, containing all the soluble constituents of the gastric juice, preserved in an agreeable aromatic menstruum. It represents both the peptic and milk-curdling ferments obtained directly from the fresh peptic glands.

Supplied in Four Sizes:

4-oz., 8-oz., 16-oz., and Winchester Quarts.

Originated and Manufactured by

FAIRCHILD BROS. & FOSTER
NEW YORK and 64-65 HOLBORN VIADUCT, LONDON, E.C.1

Agents for Europe, Asia, Africa and Australasia:
Burroughs Wellcome & Co. London, Sydney, Cape Town

PETROLEUM
STERNS LTD.
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Finsbury Square,
London, E.C.2. (1)
JELLIES

EXTRA
RECTIFIED

ALCOHOL
FOR
PERFUMERY

J. BURROUCH, Ltd., F1 Cale Distillery, LAMBETH, S.E.11

A Synopsis of the Conference Papers

THE British Pharmaceutical Conference, which is in session this week at Bath, is perhaps the chief event of the year in the pharmaceutical world. It brings together a number of chemists with like interests, and produces from wholesale laboratories and official laboratories a number of Papers on scientific subjects which should contribute to the sum of pharmaceutical progress. The address of Mr. Edmund White, the chairman, marks a departure from the rule in Conference addresses, which usually take the form of a review of some subject in which the chairman has specialised. Botany, chemistry, pharmacy or materia medica have in turn been dealt with in different aspects, but Mr. White's remarks are more like the address which we are accustomed to hear at the annual meeting of the Pharmaceutical Society. Perhaps it is intended as a lead as to what is expected from future chairmen. The general discussions on Army pharmacy, proprietary medicines and apprenticeship are on the lines of the Practice Section of the British Pharmaceutical Conference when it was an independent body, except that now the discussion is conducted by delegates from the Society's branches the resolutions may be looked upon as definite instructions to the Council in dealing with these matters. In regard to the scientific Papers, we give here short abstracts of the whole series, and for convenience have classified these on the system adopted in the Progress of Pharmacy. Longer abstracts of the Papers and notes of the discussions which took place are given elsewhere in this issue.

Under the title, *Tragacanth and its Mucilage*, Norman Evers and Thomas Machlan communicate the results of a careful investigation into the strengths of different samples of tragacanth mucilage as conditioned by effects of grinding, heating the gum, and heating the mucilage. Messrs. Evers and Machlan find that the strength of tragacanth mucilage does not vary with the nitrogen content or ash content of the gum; that heating the gum to 100° or higher impairs the suspending power; that the effect of finely grinding the gum is seriously to diminish the strength of the mucilage; that heating the mucilage gives a uniform product much more rapidly than making it by a cold process; and that a maximum suspending power is reached after about an hour in the steam oven, the power subsequently diminishing. *A Note on Chloral Hydrate in Suppositories*, by Thomas Lewis and F. J. Dyer, gives records of elaborate experiments undertaken with a view of ascertaining the maximum proportion of chloral hydrate that can be dispensed in a suppository at summer temperatures without the use of wax and the quantity of wax required for each grain of chloral hydrate beyond this maximum proportion. No fewer than sixty-two batches of suppositories were made. The authors' findings are, briefly, that 4 gr. of chloral hydrate to a suppository is a working maximum, and that for each grain beyond this quantity 2 gr. of white wax or spermaceti is required. H. B. Mackie and Edna Sharman contribute *A Note on Stainless Iodine Ointment*, based on the fact that, using the formula and method of the British Pharmaceutical Codex, they were unable, even in laboratory conditions, to keep the loss of iodine below 22 per cent. It is to be supposed that in ordinary shop conditions the loss would be greater. Further, the ointment is seldom stainless. The authors have worked out two formulas, both of which give an ointment containing, for all practical purpose, the full quantity of iodine. A novel method of storing ointments has been evolved by R. Fouracre, of which a description will be found in his communication on *An Improved Pot for*

Stock Ointments. In his paper, *Laboratory Notes*, J. F. Liverseege draws attention to certain possible sources of error responsible for apparent discrepancies in preparing or dispensing galenicals, based on observations made in the course of analyses of medicines actually dispensed.

The efflorescence of quinine sulphate, for instance, affords an interesting example of variable composition presenting several peculiar features. *The Accurate Assay of Mercurials in Ointments*, the title of the communication presented by I. Roberts, sufficiently denotes its contents. In this paper, the methods in use for determining the amounts of mercurial compounds incorporated in ointment bases are criticised, and improvements as well as modifications are suggested, based on the results of a series of investigations undertaken in connection with a study of the absorption, through the skin, of mercury and its salts when applied in the form of ointments. Some interesting observations on the rôle played by a peroxide, formed in milk under certain conditions, in destroying the peroxidase reaction and as the factor determining the oxidising power of milk, are recorded by P. Haas and B. Lee in a *Note on the Nitrite Oxidising Mechanism of Milk*. The administration of insulin requires to be carefully controlled by accurate measurements of variations in the excretion of glucose. F. Wokes, in his paper on *The Estimation of Glucose with Benedict's Reagent: A Note on Some of the Factors Affecting its Accuracy*, gives an account of the conclusions drawn from a series of experiments undertaken to determine the various factors which influence the results obtained on using this test, together with their application in practice. The preparation and composition of *Acetannin*, and certain factors responsible for variations in the constitution

of this complex acetylated tannin, are exhaustively dealt with by C. E. Corfield and G. R. A. Short. A prolonged investigation into *The Preservation of Anæsthetic Ether*, by G. Middleton, has resulted in a delicate test for the detection of peroxides in ethyl ether. The author has examined the influence of the method of purification on the rate of formation of peroxide, and has found that the exclusion of light is the most important factor in storage. Amber bottles are suitable for this purpose. The most effective substance for retarding the formation of peroxide is shown to be pyrogallol (0.01 per cent.). The now recognised value of carbon tetrachloride as an anthelmintic emphasises the necessity of establishing official standards of purity for this preparation. M. Perkins describes in his paper on *The Examination of Carbon Tetrachloride for Medicinal Purposes* various methods for the identification and determination of carbon disulphide, discussing their relative value, as well as tests for other commonly occurring impurities. The results of an investigation into the composition and constitution of bismuth citrate prepared by different methods form the subject of the paper read by F. W. Adams, entitled *The Composition of Bismuth Citrate and its Reactions with Alkalies*, in which the chemistry of this compound is examined in the light of the author's observations. In *Notes on Hydrated Bismuth Oxide*, C. E. Corfield and E. Woodward review the results of experiments undertaken to prepare a pure hydrated oxide of bismuth of definite composition. Their investigations show that it is not possible to obtain a standard product answering the formula currently assigned to this compound by the methods officially and semi-officially prescribed for its preparation. C. E. Corfield and G. R. A. Short, in their paper, *Notes on the Examina-*

tion and Composition of Bismuth Oxynitrate, record their investigations on the preparation, by different methods, of bismuth oxynitrate, and the composition of the resulting products. The methods for the determination of the components, and the factors responsible for variations in the composition of these oxynitrates, are critically discussed, based on the results of exhaustive experiments. They found that a definite subnitrate could be easily prepared, as a less basic salt than the oxynitrate of commerce, possessing a slightly lower bismuth content than the latter. In their paper, *Bismuth and Sodium Bismuth Tartrates*, C. E. Corfield and F. W. Adams describe two methods of preparing both neutral and acid forms of definite and uniform composition of these compounds. The starting point of *The Estimation of Nux Vomica Preparations*, by Harold Deane and W. E. Edmonton, is the difficulty of separating the whole of the chloroformic portion after shaking with the alkaline solution in estimating. The authors suggest that benzol, B.P. 1898, be substituted for chloroform: a larger quantity is requisite, but the results obtained are more accurate. Two papers are devoted to investigations on the tannins found in drugs, both of which deal with the practical application, as a method of identification, of certain properties of the members of this complex group. In his paper, *The Identification by Chemical Methods of Drugs Containing Tannin*, A. H. Ware describes a method of differentiating and classifying drugs containing bodies with tannin characters, based on the adoption of Stiasny's test, in conjunction with their behaviour to iodine and ammonia. This method is further elaborated in another contribution, by C. J. Jordan and A. H. Ware, entitled *The Identification and Classification by Chemical Methods of Drugs Containing Tannin: I—Application of the Goldbeater's Skin Test*, by the systematic application and interpretation of the manifestations of the "tanning" effects displayed by certain of these substances. A Note on *Artemisia Gallica*, Willd., by Cyril W. Maplethorpe,

MATERIA MEDICA

gives details of tests carried out with a view of establishing the presence of santonin in *Artemisia maritima* and *Artemisia gallica* growing in this country. From the results obtained, it seems that there is no appreciable amount present in either of the species examined—at any rate, in the stage of development met with. In another communication by the same author dealing with *The Structure and Development of the Bark of Erythrophloeum Guineense*, G. Don, the observation is recorded that the arrangement of the tannin cells in concentric circles is a conspicuous feature, which, together with the unusual number and size of the sclerenchymatous cells and their arrangement, form the most remarkable characteristics of the bark of this tree. K. Bullock, in a series of experiments undertaken in order to ascertain the best method of completely extracting the volatile oil from valerian, found that the amount of moisture present in the drug has a very great influence on the yield of oil, possibly by promoting the porosity of the tissues. The practical application of these observations and results are embodied in the paper on *The Assay of Valerian Root and of Certain other Aromatic Drugs*. It is interesting to note that the author found that a tincture made from fresh English-grown valerian was double the strength of one prepared from dried, imported root. *The Assay of Strychnos cinnamomifolia*, by G. R. A. Short, gives the analytical data of a test of seeds of this plant sent from Travancore. The author finds a total alkaloidal content of from 2.432 per

cent. to 2.801 per cent., only about 0.3 per cent. being strychnine. The seeds closely resemble those of *S. Nuxvomica*, but have not, the author remarks, been commercially exploited.

Pyridinised Spirits Irritation

We shall be glad if any of our subscribers who have come across cases where the use of pyridinised methylated spirits has caused irritation when applied to the skin will send us details of the case. The question, it will be remembered, was raised in the *C. & D.* some time ago, and we have submitted to the Board of Customs and Excise details of the cases upon which our recent note was founded (*C. & D.*, July 12, p. 64). It is necessary that as much evidence as possible be submitted so that the authorities may see that the objections to the use of crude pyridine as a denaturant are not merely founded on prejudice. A good deal of methylated spirits is used in hospitals as an application to the skin, but as industrial spirit is generally obtainable for hospital use, instances of skin irritation are not likely to occur. Our attention has also been called to a reaction which takes place when picric acid is dissolved in the new methylated spirits. Formerly the solution remained clear, but with the pyridinised spirit a cloudy liquid results. There have been letters in "The Times" in regard to the irritation likely to be caused to surgeons' hands who use the spirit as a sterilising agent.

The Composition of "Yadil"

THE "Daily Mail" of July 22 contains an article by Sir W. J. Pope, F.R.S., Professor of Chemistry in the University of Cambridge, which is stated to be "an exposure" of "Yadil." Sir William sets out to show:—

(1) That "Yadil" antiseptic is not "trimethenal allylic carbide."

(2) That it is a dilute water solution of well-known substances.

(3) That the price at which it is sold is some sixty times the actual cost of the materials used, and

(4) That no valid evidence has been so far produced that "Yadil" has any efficacy in curing the maladies mentioned.

In regard to (1), it is stated that "trimethenal allylic carbide" is meaningless and such a compound does not exist. Methenal is one of the synonyms of formaldehyde and garlic oil consists mainly of allyl sulphide and allyl isothiocyanate, so that Mr. Clement may claim that those with eyes to see could have known the composition of his remedy. The composition is given as:—

Formaldehyde	...	...	...	1 per cent.
Glycerin	...	...	...	4 per cent.
Water	...	...	...	94 per cent.

and a "smell" which can be closely imitated by adding one part in four millions of essential oil of garlic and one part in two hundred thousand of essential oil of mustard. Sir William adds that a grave responsibility is incurred by the manufacturers of a secret remedy for internal use containing 1 per cent. of formaldehyde. Into the question of the price at which "Yadil" is sold and its efficacy for the diseases for which it is sold we need not follow Sir William, as these are not matters upon which the opinion of a professional chemist would be taken as authoritative. Professor W. E. Dixon, on July 23, comments on Sir William Pope's analysis, and states that formaldehyde is irritant and poisonous and has a cumulative effect when taken internally. He seems unaware of the fact that formaldehyde as formamint is used very largely as a medicament. A dose is assigned to formalin in Martindale's "Extra Pharmacopœia," where also in referring to "Yadil" the shrewd remark is made that it smells of formaldehyde.

BRITISH PHARMACEUTICAL CONFERENCE



Bath 1924

REPORT OF THE PROCEEDINGS



THE first ordinary meeting of the British Pharmaceutical Conference took place at Bath in 1864, the meeting at Newcastle-on-Tyne in 1863 having been inaugural and more or less informal in character. Mr. Henry Deane (London) presided; Dr. J. B. Edwards (Liverpool) was Vice-President; Mr. H. B. Brady (Newcastle), treasurer; Dr. John Attfield (London) and Mr. R. Reynolds (Leeds), general secretaries; and Mr. J. C. Pooley, local secretary. The number of members present was about fifty, including Messrs. Daniel Hanbury, S. Gale, J. C. Brough (Editor of *THE CHEMIST AND DRUGGIST*), T. B. Groves, J. Abraham, G. F. Schacht, F. C. Clayton, W. W. Stoddart, and C. Ekin. The proceedings occupied from Wednesday, September 14 to Monday, September 19, inclusive, and ended with a dinner, at which there were numerous toasts and "some rather remarkable musical essays" by three members whose names were handed on to posterity on the *C. & D.* "Success to the British Pharmaceutical Conference" was proposed by one of the oldest chemists then in Bath, Mr. J. Raymond King, and it was recorded that the hearty welcome of the Bath chemists would long be remembered. The year 1864 saw the issue of the first British Pharmacopoeia, which received severe criticism in the course of the presidential address; but the topic that overshadowed all others at the Conference was a law case at Liverpool in which a firm of chemists had to pay £1,500 compensation in respect of an assistant's error. A committee of four Bath chemists (Messrs. J. Raymond King, J. H. Marsh, F. W. Kent, and John B. Merrikin) had been appointed to consider "the prevention of accidental poisoning," and their report, occupying nearly three pages of *THE CHEMIST AND DRUGGIST*, gave rise to a discussion that apparently lasted the whole of one day and part of another. The authors of the twenty-eight scientific papers included Professor C. R. C. Tichborne, Mr. Charles Umney, Mr. F. Baden Benger, Dr. Attfield, Mr. F. C. Clayton, Mr. Barnard S. Proctor, Mr. H. B. Brady, Mr. Daniel Hanbury, Mr. W. D. Savage, and Mr. Francis Sutton. Bath was once more the home of the Conference in 1888.

Mr. F. Baden Benger was President, and in the course of his address from the chair reviewed the systems of pharmaceutical education in vogue in several Colonial and foreign countries. The treasurer was Mr. Charles Umney; the general secretaries, Messrs. W. A. H. Naylor, F.I.C., and J. C. Thresh, D.Sc.; and the local

secretary, Mr. H. Hutton. Papers were contributed by Messrs. E. M. Holmes, D. B. Dott, R. Stockman, M.D., Charles Symes, Ph.D., William Kirkby, A. W. Gerrard, R. Wright, W. Inglis Clark, D.Sc., F. Ransom, David Hooper, and other investigators. The social events included a reception by the President (whose tenure of office was popular in a marked degree), a smoking concert, and a day's excursion to Chepstow and Tintern Abbey. Among the 150 or more who signed the attendance book were about a dozen ladies—a proportion materially altered since then. A glance through the list gives, among others, the following names: Mr. A. C. Abraham, Mr. S. R. Atkins, Mr. F. C. J. Bird, Mr. R. Bremridge, Mr. T. M. Clague, Mr. Thomas Greenish, Mr. T. B. Groves, Mr. and Mrs. W. L. Howie, Mr. Peter MacEwan, Mr. and Mrs. N. H. Martin, Mr. W. Martindale, Mr. F. Passmore, Dr. B. H. Paul, Mr. J. C. C. Payne, Mr. (now Sir) R. A. Robinson, Mr. W. D.



COUNCILLOR C. H. HACKER,
Mayor of Bath

Savage, Mr. G. F. Schacht, Mr. H. S. Wellcome, Mr. G. S. Woolley, and Mr. A. C. Wootton (Editor of *THE CHEMIST AND DRUGGIST*). Messrs. Marsh & Merrikin, two of the chemists who drew up the 1864 report on accidental poisoning, were again present at the 1888 Conference. Bath was also visited by way of an excursion in 1903, when the Conference was at Bristol. The party was met at the station by several Bath pharmacists, and thus guided visited the Roman Baths (where the deputy-Mayor and the city architect spoke), the Abbey Church, and other places of interest. The Conference of 1924 apparently made a distinct impression in Bath circles. We read in the "Bath Herald" that the Rector prefaced his morning sermon on July 20 with a welcome to the delegates; and public interest was further evidenced by the liberal amount of space accorded by the "Herald" and by the "Bath and Wilts Chronicle."

Opening Session

Tuesday Morning, July 22

The Conference, under the influence of a delightful morning, met in the best of spirits in the palatial banqueting room of the Bath Guildhall. Comparisons, however odious, may be risked for once with the remark that this banqueting room reminded some of the Metropolitan visitors of the halls of the City companies. In the opening proceedings the Conference was very much its old self. The Mayor of Bath sat immediately on the right of the chairman (Mr. Edmund White), and the other occupants of the platform were the President of the Pharmaceutical Society (Mr. F. Pilkington Sargeant), the Vice-President (Mr. Philip F. Rowsell, Mayor of

tion. Mr. Gamble moved the customary vote of thanks, incidentally letting fall the significant warning that the legal side of pharmacy would need attention. Mr. Peck seconded, and put the motion, which was heartily agreed to and humorously acknowledged. "Ladies, you may go," said the chairman at that point; and the instantaneous response was one of the surprises of the Conference. Next followed the reading of apologies for absence, the treasurer's report, and the secretaries' report; and in rising to second the adoption of the last-named the veteran Mr. R. Feaver Clarke was accorded an ovation. The reading of science papers commenced just after 11.30; as it happened, the programme was so arranged that members were able to indulge in an orgy of discussion on bismuth salts. Some



Photo]

AT THE ROMAN BATHS

[Cleworth

Left to Right (sitting): Mr. F. P. Sargeant, The Mayoress of Bath, The Mayor, Mr. E. White. *Left to Right (standing):* Mr. D. Lloyd Howard, Dr. F. W. Crossley-Holland, Mr. C. H. Hampshire, Mr. P. F. Rowsell (Mayor of Exeter), Sir William Glyn-Jones.

Exeter), the treasurer (Mr. F. E. Bilson), the secretary (Sir William Glyn-Jones), Councillor West (brother-in-law of the Mayor of Bath), Mr. D. Lloyd Howard, Mr. C. H. Hampshire, Dr. F. W. Crossley-Holland, Mr. F. W. Gamble, Mr. C. A. Hill, Mr. E. Saville Peck, and Mr. D. J. Williams. The Mayor of Bath, in a felicitous speech, placed the claims of the city no higher than the occasion warranted, and raised loud laughter by a thrust at his brother-Mayor of Exeter. Speculating on the probable absence of doctors and chemists in Bladud's time, his worship remarked, "We call you chemists—I don't know what you call yourselves." The gathering was obviously charmed by an official welcome which struck an unusually friendly note. The President of the Pharmaceutical Society, in moving a vote of thanks to the Mayor, successfully tapped his audience's sense of humour by remarking that Bath had one thing in common with pharmacy—both owed much to the skilful manipulation of water. The chairman's address was in a serious vein, with fewer asides than most of his hearers expected, and was followed with close atten-

tion of the authors, as the chairman remarked, made their first appearance as readers of papers. The papers and the discussions are reported in our science section. The branch delegates met on Tuesday afternoon, and again on Wednesday morning; reports of their proceedings will be found on pages 139 to 145.

THE MAYOR'S WELCOME

The CHAIRMAN called upon the Mayor, who, he said, had come to give them a welcome to that beautiful and ancient city.

The MAYOR (Councillor C. H. Hacker), who was received with applause, said: I had the privilege yesterday of individually giving a welcome to most of you who are gathered here this morning. I have a greater privilege this morning in extending to you an official welcome to this Queen City of the West. You are one of many organisations and bodies who come to our famed city, because of her beauty, because of her hospitality, and because of her charm in so many ways. (Hear, hear.) We are possessed of many things—many things that sometimes make us very, shall I say, egotistic, but they are things to which, although we possess them,

we claim no right ourselves. They are a wonderful heritage of ours, which has been given to us from the hand of the Great Divine, and they are given to us as a trust that we may keep and preserve and use for the benefit and blessing of our fellow-men. (Hear, hear.) You had the opportunity yesterday, in the short visit you paid to our Pump Room and to our Roman Promenade, of seeing something there of that which has been entrusted to us that go back over all the ages. I don't know whether I can tell you this morning exactly their age and when they were first discovered, but back in the time of the Romans this city of ours was famed for her healing. You have heard the fable of Prince Bladud and his pigs, and although we may not believe it in its entirety, we may believe that they came wandering here with a leprosy that all the medical skill of the land could not cure, and having washed in the swampy waters were cleansed. I am wondering if there were any doctors or chemists then—(Laughter)—and whether the Prince tried all the remedies suggested by doctors and all the potions offered him by chemists first. (Laughter.) Now, you have come to us, many of you, as first visitors to our city. Some of you may have been delegates to the Bath Conference of thirty-six years ago, but that applies to few of you judging by your youthful appearance. (Laughter.) I should be correct in saying that none of you were present at the earlier conference of sixty years ago. Your Association was then in its infancy. Again, there were pleasant recollections associated with the Conference of thirty-six years ago. In this year of grace, on your third visit, I have the great joy of giving you welcome and expressing the hope that you will find every attraction, entertainment, hospitality, and kindness. We call your Bath brethren chemists. (Laughter.) They are very kind to us as a city and as individuals. We have trusted ourselves into their hands again and again. We never know really what we receive from them. (Laughter.) We are the most trusted race under the sun. But they have been wonderfully kind to us, and if after the intricacies of the papers they delved into our records you will find there is no city in this land of ours where people live longer than in the city of Bath. We have a few cemeteries, and they are filling very, very slowly. (Laughter.) People coming here from all parts after a life of hard work, with a pittance only, live on and on and on—(laughter)—and it is because of that we offer the open door to all who will come here. I believe you come as ambassadors on your own behalf. I care not where you have been or where you are going, you will not find a more beautiful city than Bath. (Applause.) You will find time to see our parks and gardens. They are famed in the whole of the West. I say that in the presence of the Mayor of Exeter. (Laughter.) You will go away impressed by this wonderful old city, placed as it is in this little basin of hills, as indeed beautiful for situation—the joy of the earth. You will see our famed buildings that are so beautifully described by one of your local lecturers. Then you are to be taken into the surrounding districts—at least, the ladies are. The gentlemen will, I am sure, place business before pleasure. (Laughter.) I hope so, Mr. Chairman. (Laughter.) But the ladies deserve these little acts after all. Before you came to conference and after you go they do the work while you enjoy yourselves—(laughter)—and you are asked for these few days to give your attention to business by way of change in order that you may return home better equipped in every way—in stamina by your visit to Bath and by the knowledge you will gain. (Applause.) In the name of the city, which it is my privilege to represent here this morning, I give to you a very sincere and equally hearty and cordial welcome, and I hope that your stay here will be a very happy time indeed. (Applause.)

Mr. SARGEANT, who was called upon by the chairman to acknowledge the gracious welcome by the Mayor, said he must really thank the Mayor for his very cordial and eloquent welcome that he had extended to them that morning. They as pharmacists felt peculiarly at home

in this beautiful city, for if it was true, and it could not be doubted, that the best friends of a cause were those who assisted a cause in its infancy, then the Bath Corporation was one of the best friends the Society ever had. The Society was formed in 1843, and before the year was out there was a very flourishing branch in this city, and one of the principal objects for which it was formed was the education of the budding pharmacists; and in 1843 they would find that a school of pharmacists, a course of lectures, was commenced by Mr. Noad at the Bath Royal Scientific and Literary Institution under the auspices of the branch. Their co-body, the Conference, was formed in 1863 at Newcastle, and the first annual meeting of that Conference was held in their beautiful and historic city. It was quite possible that the sympathy between that municipality and his profession was a little more subtle than would appear on the surface. It was quite possible that the prosperity of the municipality and his profession might be due to the same factor—that was, the skilful manipulation of water. (Laughter.) In any case, they knew that physicians prescribed, either that municipality or his profession dispensed, and the patient accepted the treatment, but he thought it was a platitude to say that the success of the treatment was to a large extent due to the faith of the patient. (Laughter.) There was a certain amount of dubiety associated with faith. The strongest believers were assailed by doubt. They had come to Bath, not on the advice of their physicians, but at the courteous invitation of their pharmacist citizens, but they had the faith that the visit would be to their moral, mental and physical advantage; but if there were any doubt upon that score the cordiality and heartiness of the Mayor's welcome would entirely dispel it.

This was carried with acclamation.

The CHAIRMAN then delivered his address, which is printed in full on pp. 119-122.

VOTES OF THANKS

Mr. F. W. GAMBLE, ex-chairman of the Conference, moved a vote of thanks to the chairman for his address. Mr. White, in addressing them, was able to utilise his great experience and knowledge in all branches of pharmacy. He had been able to outline, as, perhaps, no one else could, what should be the future lines of development in regard to the special exigencies of the present time, and he had been that morning in what he thought they might call the optimistic mood in which they loved him best. (Applause.) He thought he was right when he said that the Pharmaceutical Society must closely follow the developments of modern scientific medicine. He would even go further and say that perhaps the Society should try to anticipate the development of modern medicine. (Applause.) Short of that, it certainly must closely follow. He thought that perhaps the same lines of reasoning might apply in another direction, and, perhaps, that the Society must also closely follow, and, perhaps, anticipate, the lines of development on the legal side, because there had been, and presumably there still would be, changes on that side. All of them would see with regret any tendency for the control of poisons to pass out of the hands of the Society. (Applause.) This was more than a vote of thanks. It was really the first occasion upon which the members of the Conference saw its chairman face to face, so to speak. Perhaps they might be so impressed by him they would hope he would continue in office. No one who read a record of his work could fail to recognise him as a man of parts. He had stood upon most of the rungs of the pharmaceutical ladder, and it seemed the higher the rung he attained the more firmly he stood. Perhaps they would allow him to prove the moral, and he thought they would all agree that his career was an example to the younger pharmacists, because they must all admit that what had been done could be done again. (Applause.)

Mr. E. SAVILLE PECK, seconding said that on several occasions they had asked Mr. White to become chairman, but owing to pressure of work he had declined until this year. His address was full of optimism and ideas of real

progress. He hoped his challenge would be taken up, and that they would go forward on the lines he had suggested. He told them there must be no delusions. They must earn the right to participate in the new developments.

This was carried with applause, and the chairman briefly replied.

APOLOGIES FOR ABSENCE

The chairman intimated that apologies for absence had been received from Dr. G. Claridge Druce, Mr. F. Ransom, Dr. Charles Symes, Mr. William Kirkby, Mr. E. H. Farr, Mr. E. M. Holmes, and Mr. W. A. H. Naylor.

ANNUAL REPORT

The annual report, read by Mr. C. H. Hampshire, is summarised as follows:—

The Executive desire to record their appreciation of the cordial interest and generosity shown by pharmacists in providing hospitality and facilities for its annual meetings. The membership consists of (1) the members and honorary members of the Pharmaceutical Society, and (2) 231 corresponding members. Representatives of the Executive have attended several meetings of the Science Committee, and have participated in the important work done by the Committee in the revision of the British Pharmaceutical Codex. No award was made in the competition for the Harrison memorial medal. It is hoped that members will endeavour to encourage the younger pharmacists to undertake research work and to submit papers for this medal. Funds are available from which grants can be made. The "Year-Book" for 1923 was issued in its new form early in April. The "Year-Book" is sent to all members and corresponding members who apply for it. The Executive desires to record its appreciation of the work of Mr. J. O. Braithwaite as editor of abstracts.

Mr. C. A. NOBLE moved the adoption of the report. He congratulated the executive on the splendid list of science papers they were going to hear. Turning to the social part, he said they were very grateful to the Bath branch for the list of social events that they had arranged for them. If the weather were good, they would carry away very sweet memories of the city.

Mr. HALLETT (Bath) seconded, and hoped the delegates would have a happy time.

TREASURER'S REPORT

Mr. D. LLOYD HOWARD (treasurer) presented his report, which is summarised as follows:—

Income: Balance in hand, £233 8s.; subscriptions (net), £34 1s.; advertisements, £24 12s. 5d.; sale of "Year-Book," £33 14s. 9d.; Pharmaceutical Society, £339; dividend, £30 14s.; income-tax recovered, £10 1s.; total, £710 11s. 2d. Expenses: Assistant Secretary, £45; "Year-Book," £3 4s. 7d.; foreign publications, £2 13s.; American Chemical Society, £3 14s. 6d.; Butler & Tanner, £425 6s. 6d.; printing, etc., £23 18s. 9d.; J. O. Braithwaite, £25; other expenses, £14 2s. 3d.; balance at bank, £167 11s. 7d.

The financial statements of the Bell & Hills Fund and of the Conference Research Fund are also included in the report.

Mr. LLOYD HOWARD said the affairs of the old Conference were completely wound up, and they started with a clean sheet. It followed from that, that the figures were entirely abnormal and could not be compared with past years. The heaviest item of expenditure, a sum of over £400, really related to the previous year.

Mr. LAYMAN proposed the adoption of the report.

Mr. A. FEAVER CLARKE, seconding, recalled that it was seventy years ago since he went to school in Bath.

The courtesy of the Bath Corporation in allowing the Conference the use of the Guildhall Pump Room was on a scale of generosity not often experienced, even in cities of great antiquity and possessed, accordingly, of a fine tradition in hospitality.

A profound impression was made, on the first day, by the gorgeously-attired functionary, who made the announcements on behalf of the Mayor of Bath. The effect of the green robe and the towering head-dress of fur was almost that of a figure from the Russian ballet.

Science Section—Tuesday Morning

The first paper taken at Tuesday morning's session was:—

Notes on the Examination and Composition of Bismuth Oxynitrate*

By C. E. CORFIELD, B.Sc., Ph.C., F.I.C., and G. R. A. SHORT, Ph.C.

[ABSTRACT]

Many experimenters have recorded results obtained from investigations on the preparation, by different methods, of bismuth oxynitrate, and several users have at different periods observed that the commercial product is liable to considerable variation both in physical characters and chemical composition. There seems, however, to be still some doubt as to its composition, and as to methods of production by which substances of fairly constant composition can be obtained. It is now well known that normal bismuth nitrate in the crystalline condition, or in solution in nitric acid, undergoes hydrolysis with water, and that the composition of the basic nitrate formed varies with the amount of water used, and the conditions under which the hydrolysis is effected. After reviewing the literature, and the several methods described by different investigators for the determination of nitrate in this basic salt, the authors record the results of their examination of these methods, together with those used for bismuth and combined water. For the metal they relied entirely on the quantitative conversion by gentle ignition into Bi_2O_3 , a process which is generally accepted as accurate, and one by which concordant results are easily obtained. So far as published papers indicate, the water of basic nitrates of bismuth has been calculated either by difference, or by loss in weight when heated under certain conditions. The authors found that Upsher Smith's method of determining the H_2O content is entirely unsuitable for the samples they examined. Experiments were made to determine this component by heating the substance in a porcelain boat in a hard glass tube, in a current of dry air, reducing the oxides of nitrogen by means of heated copper, and absorbing the water in fused calcium chloride in a tube protected from atmospheric moisture by a second vessel charged with sulphuric acid. Some difficulty was experienced with the reduction of the oxides of nitrogen, but the final results, added to the values for Bi_2O_3 and N_2O_5 , gave figures within 0.3 of 100, suggesting the comparative accuracy of this method for the three components. Eleven processes for the determination of nitrate were considered, and the standard used for this work was recrystallised pure potassium nitrate. The special method of the Board of Agriculture and Fisheries (Leaflet 18, p. 16) used for nitrate fertilisers free from organic matter was found to be rapid, and at the same time to give accurate and concordant results. This latter method, which the authors specially recommend for nitrate, and which was used in the examination of the subnitrates prepared by them, is as follows:—About 0.5 gram of substance is placed in a half-litre Erlenmeyer flask with 50 c.c. of water and 20 c.c. of sulphuric acid (1.35); 10 grams of reduced iron is then added, and the flask closed with a rubber stopper provided with a thistle tube, the head of which is half filled with glass beads; the liquid is boiled for five minutes, removed from the source of heat, and any liquid that may have accumulated among the beads is washed back with water into the flask. The whole is then boiled for three minutes, the beads again rinsed, and the mixture transferred to an ammonia distillation apparatus, in which it is treated with 50 c.c. of 50 per cent. sodium hydroxide. The distillate is collected in 50 c.c. $N/10$ sulphuric acid, and the excess of acid titrated with $N/5$ alkali, a blank determination being made under the same conditions. Some more or less isolated methods of preparing the oxynitrates, including those of Thorpe and De Schulten, were repeated, and described by the authors. The influence of dilution and concentration of nitric acid upon the

* Contribution from the Chemical Research Laboratory of the Pharmaceutical Society.

precipitation and composition of the oxynitrate was determined by preparing and investigating four series of reaction mixtures. For this purpose a solution of pure crystalline normal bismuth nitrate in diluted nitric acid was employed. Portions of this solution were added to different volumes of water, shaken frequently at intervals, and the products examined and analysed at the end of eight days.

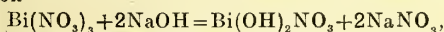
SERIES I.—10 c.c. of solution, containing 30 per cent. $\text{Bi}(\text{NO}_3)_3 \cdot 5\text{H}_2\text{O}$ and 10 per cent. of added HNO_3 , was added to each of eleven bottles containing respectively 10, 20, 30, 40, 50, 75, 100, 125, 250, 350, and 500 c.c. of water. No precipitation took place in Nos. 1, 2, and 3, but basic salts were formed in the remainder. Light crystalline scales were produced immediately in Nos. 4 to 8 in increasing quantity, and in 9 to 11 heavy crystalline deposits, in the form of monoclinic prisms, formed slowly.

SERIES II was obtained in a similar manner, using a solution containing 5 per cent. of added HNO_3 . Oxynitrates were observed as in the first series, but in much greater bulk in Nos. 1 to 8.

SERIES III was prepared as Series I, but to each quantity of water was added 10 c.c. of sodium hydroxide solution, containing sufficient NaOH to react with the added nitric acid in the 10 c.c. of bismuth solution. On examination the crystalline forms were similar to those observed in the other series. The amount of oxysalt formed in Nos. 1 to 6 was considerably greater than in the second series, and in Nos. 9 to 11 about the same as in the other two series. Microscopical examination showed in each series the presence of two well-defined compounds apparently free from admixture, whilst certain of the intermediate dilutions consisted of mixtures of these in varying proportions. Nos. 6 and 11, or dilutions 75 and 500, were taken as representative specimens of these two compounds, and the figures obtained on analysis, together with other relevant data, are given in the following table:—

No.	6			11		
Series.	1	2	3	1	2	3
Per cent. Bi_2O_3	76.58	77.04	76.96	79.83	79.87	8.01
Per cent. N_2O_5	18.19	17.83	17.78	15.61	15.77	15.54
Per cent. H_2O	5.23	5.13	5.26	4.56	4.36	4.45
Per cent. of Bi-precipitated	39	62	81	87	94	97
Acidity of filtrate	0.27 N	0.23 N	0.18 N	0.063N	0.048N	0.035N
Per cent. of free acid (N_2O_5) in filtrate	1.46	1.23	0.96	0.34	0.26	0.19

SERIES IV.—In this series the conditions were adjusted in order to raise the concentration of the bismuth nitrate, and at the same time to maintain a concentration of free acid in the final mixtures round about the limits required for the formation of the more basic compound. 10 c.c. of the 30 per cent. bismuth solution containing 10 per cent. of added HNO_3 was added to each of nine equal quantities (50 c.c.) of water containing varying amounts of sodium hydroxide. The concentration of sodium hydroxide was adjusted so that No. 1 contained sufficient to neutralise the added HNO_3 , and the equivalent of one molecule of HNO_3 liberated during the hydrolysis of the normal salt, No. 5 sufficient to react with the free and two molecules of liberated acid, and No. 9 the necessary amount to react with the whole of the acid both free and combined. Microscopical examination of the precipitated oxysalts revealed the fact that Nos. 1 to 3 consisted of crystalline scales similar to the products of the higher concentrations in the three series above. Nos. 4 and 5 resulted in semi-crystalline deposits, whilst in Nos. 6 to 9 the precipitate was almost entirely amorphous, increasing in bulk as the concentration of acid decreased. Analysis showed that when the amount of alkali added was theoretically sufficient for producing the reaction expressed by the equation—



the oxysalt was more basic, resembling in composition the product of the lower concentrations in the previous series, but much less dense. It is evident that the subnitrate of commerce is precipitated under very similar

conditions, and it is observed that the yield of subnitrate is practically 100 per cent. Analyses of Nos. 1, 5, and 7, the last of which appeared to contain a proportion of bismuth hydroxide, together with the percentage, yields and acidity of the filtrates, are given in the table below:—

Nos.	1	5	7
Per cent. Bi_2O_3	76.77	79.63	84.74
Per cent. N_2O_5	17.79	15.67	10.80
Per cent. H_2O	5.44	4.72	4.46
Per cent. of Bi-precipitated	92.0	99.3	—

The mean value for the less basic salt proves that in this substance the ratio $\text{Bi}_2\text{O}_3 : \text{N}_2\text{O}_5$ is 1:1, and the authors are satisfied that this subnitrate is accurately represented by the formula $\text{Bi}_2\text{O}_3 \cdot \text{N}_2\text{O}_5 \cdot 2\text{H}_2\text{O}$, or $\text{BiONO}_3 \cdot \text{H}_2\text{O}$, which requires

Bi_2O_3 , 76.31 per cent.; N_2O_5 , 17.76 per cent.; H_2O , 5.92 per cent.

The fact that the mean value for water is slightly lower may be due to the presence of a small proportion of $\text{Bi}_2\text{O}_3 \cdot \text{N}_2\text{O}_5 \cdot \text{H}_2\text{O}$, into which basic salt Van Bemelen and Rutten have shown that it passes when in contact with a solution containing more than 1 per cent. of N_2O_5 . The mean value for the more basic salt leaves no doubt that the ratio $\text{Bi}_2\text{O}_3 : \text{N}_2\text{O}_5$ is 6:5, but it is almost impossible to define the number of water units present. This product is sufficiently well represented by the formula $6\text{Bi}_2\text{O}_3 \cdot 5\text{N}_2\text{O}_5 \cdot 9\text{H}_2\text{O}$.

That the composition of the bismuth oxysalts is dependent on temperature has been shown by previous investigators. In a series of precipitations carried out by the authors at temperatures between 20° C. and 100° C., 5 c.c. of a solution containing 60 per cent. normal nitrate and 5 per cent. nitric acid was added to 55 c.c. of water at the required temperature, and the mixture maintained at that temperature for thirty minutes. The products were washed with 10 c.c. of water, dried on porous plates, and submitted to examination; the results are given in the accompanying table:—

Temp.	Per cent. Bi_2O_3	Per cent. N_2O_5	Per cent. H_2O	Microscopical appearance
20° C.	77.04	17.83	5.13	Thin scales
40° C.	78.14	16.95	4.91	Amorphous with scales and prismatic crystals.
60° C.	78.80	17.13	3.07	Amorphous
80° C.	79.66	17.14	3.20	Prismatic crystals
100° C.	79.78	16.67	3.55	Prismatic crystals.

It will be observed that the temperature of precipitation produces a marked change in form, and that by precipitation at temperatures above 60° C. oxysalts are obtained with about 80 per cent. of Bi_2O_3 , but more acid than under other conditions. The product precipitated at 100° C. was heated on a water bath for six hours, and on subsequent analysis gave:—

Bi_2O_3 , 87.88 per cent.; N_2O_5 , 10.12 per cent.; H_2O , 1.99 per cent.

This confirms the view of previous investigators that the final product of the action of boiling water is an oxysalt of the composition $2\text{Bi}_2\text{O}_3 \cdot \text{N}_2\text{O}_5 \cdot \text{H}_2\text{O}$, which requires:— Bi_2O_3 , 88.04 per cent.; N_2O_5 , 10.25 per cent.; H_2O , 1.71 per cent.

Mention has been made of an attempt to determine the water content of bismuth oxynitrate of commerce by heating at 120° C. for twenty-four hours. That this cannot be effected, even by heating for a much longer period, and that loss in nitrate takes place, is shown by the following table, which gives the percentage loss in weight at intervals during forty-two hours' heating. At the end of this period the loss in N_2O_5 was 2.25 per cent., and the product was estimated to contain 1.79 per cent. of water.

No. of hours	Per cent. loss in weight	No. of hours	Per cent. loss in weight
4	0.682	30	4.03
11	2.22	34	4.57
16	2.77	38	4.95
23	3.27	42	5.16

The authors examined a number of samples of commercial bismuth oxynitrate for pharmaceutical use, obtained from different manufacturers during 1923, and are of the opinion that, although there is obvious variation in density, the substance is fairly uniform in chemical composition. With one exception the samples conformed to the requirements of the British Pharmacopœia, and gave the ratio $\text{Bi}_2\text{O}_3 : \text{N}_2\text{O}_5 = 6 : 5$, so that the position is almost identical with that found by Harrison in 1910, who showed that the official substance corresponded to the formula $6\text{Bi}_2\text{O}_3 \cdot 5\text{N}_2\text{O}_5 \cdot 8\text{H}_2\text{O}$. In conclusion, the authors state that by the action of water on normal bismuth nitrate or nitric acid solutions of this salt, a number of oxysalts of definite composition can be prepared. The formula $\text{BiONO}_3 \cdot \text{H}_2\text{O}$ represents a definite subnitrate easily prepared, which yields 76.3 per cent. of Bi_2O_3 , but the oxynitrate of commerce manufactured for pharmaceutical purposes is a more basic salt of the formula $6\text{Bi}_2\text{O}_3 \cdot 5\text{N}_2\text{O}_5 \cdot 9\text{H}_2\text{O}$, which yields 79.8 per cent. of Bi_2O_3 . Practically theoretical yields are obtained by pouring solutions of bismuth nitrate into water containing definite quantities of alkali, and the product is light and amorphous in character. The proportion of nitrate in bismuth oxynitrate can be accurately and rapidly determined by reduction with reduced iron and sulphuric acid in accordance with the process prescribed by the Board of Agriculture and Fisheries for nitrate fertilisers. If the oxynitrate manufactured containing from 79 per cent. to 82 per cent. of Bi_2O_3 is satisfactory for pharmaceutical purposes, the monographs of the British Pharmacopœia (1914) and the British Pharmaceutical Codex (1923) need revision.

DISCUSSION

The brief discussion was opened by the chairman, who was followed by Messrs. D. LLOYD HOWARD, T. E. MORSON, J. P. ELLERINGTON, and J. RUTHERFORD HILL.

Replying, Mr. CORFIELD said they had found that samples manufactured in Germany were of about the same composition. The French Codex of 1920 recognises a salt containing 77 per cent. of oxide, but this has been extended by recent Supplements, and 80 per cent. is now admitted. The United States Pharmacopœia gives no formula, nor does the Dutch, and he thought it unnecessary for the B.P. or the Codex to adopt a formula. In none of the samples examined had there been found ammonia.

The next paper was :—

Notes on Hydrated Bismuth Oxide *

By C. E. CORFIELD, B.Sc., Ph.C., F.I.C., and ELSIE WOODWARD, Ph.C., A.I.C.

[ABSTRACT]

It is generally believed that bismuth hydroxide, $\text{Bi}(\text{OH})_3$, is obtained readily by interaction between solutions of bismuth salts and ammonia or solutions of caustic alkalies, and that this orthohydroxide is converted by drying at 105°C . or by contact with caustic-alkali solution into the metahydrate $\text{BiO} \cdot \text{OH}$, which on further heating yields the trioxide of bismuth Bi_2O_3 . Recently the authors had occasion to prepare and use hydrated bismuth oxide for the production of certain organic salts, and as a result have been led to investigate further the methods by which this substance is prepared, its composition, and its behaviour towards alkalies. [The authors review previous work on the subject.] The British Pharmaceutical Codex, 1923, describes bismuth hydroxide, $\text{Bi}(\text{OH})_3$, as a white amorphous powder prepared by pouring rapidly a solution of bismuth nitrate in dilute nitric acid into solution of ammonia, filtering, washing and drying below 60° or 70°C .; it should yield 95 per cent. of Bi_2O_3 , and should be free from nitrate. It is stated also to be soluble in a mixture of glycerin and sodium hydroxide. Bismuth hydroxide of the French Codex, 1920, is obtained by a process based on Thibault's work, and is described as a white amorphous powder, of the formula $\text{BiO}(\text{OH})$, yielding 96 per cent. of Bi_2O_3 .

Both methods may be useful for special purposes, but in the author's opinion both standards require essential revision if they are required to represent accurately the products of the methods prescribed or the commercial article supplied to them. None of four commercial samples examined [details are given in a table] came within the description of the Codex. The high percentages of nitrate in three of them and the proportions of carbonate in all four suggest that the substances cannot accurately be described as bismuth hydroxide, oxyhydrate, or hydrate. Sample C contained an appreciable amount of yellow oxide, Bi_2O_3 . The high proportion of carbonate is due primarily to the fact that bismuth hydroxide, on exposure, readily absorbs carbon dioxide, and special precautions are necessary to avoid undue absorption during the preparation of the material and its storage.

The authors have prepared and examined hydrated bismuth oxide resulting from published methods, and have examined more closely the action of alkali on solutions of bismuth salts, in order to determine the possibility of preparing this substance free from oxysalt and oxide. The main points for consideration when precipitating from acid solution by means of caustic alkali are the precipitation of oxysalt and conditions such that the slight excess of alkali may completely hydrolyse this, without at the same time bringing about dehydration of the hydrate with formation of oxide. Observations have been made by former investigators that contact with alkali or an increase in the concentration of alkali may result in an increased proportion of oxysalt in the product. This may, under certain conditions, be true, but depends rather upon the formation of oxysalts of different stability towards alkali. Moreover, while it is difficult, if not impossible, to precipitate directly an oxide-free product which does not at the same time contain oxysalt, it is possible, by washing with weak caustic alkali, to reduce appreciably the percentage of oxysalt present. Several series of experiments were made, using a solution of crystalline bismuth nitrate in diluted nitric acid containing 30 per cent. bismuth nitrate and 10 per cent. by volume of concentrated nitric acid, and a 14 per cent. solution of pure sodium hydroxide. The effect of concentration, temperature and length of time during which the precipitate was in contact with the mother liquor was observed. In a series of reactions in which 100 c.c. of the bismuth solution was mixed with 100 c.c. of the alkali solution diluted with from 1 to 20 times its volume of water, and the mixture allowed to stand overnight, it was found that, after washing and drying, the products were yellowish-white in colour and contained from 2.90 per cent. to 1.74 of N_2O_5 , the proportion decreasing with increasing dilution of the alkali solution. Similar reactions carried out at 100° , after maintaining the temperature of the reaction mixture for half an hour, gave a series of products ranging from a yellow crystalline 99.35 per cent. oxide free from nitrate to a yellow-white product, showing by microscopical examination a proportion of yellow crystalline oxide, and giving on analysis 96.11 per cent. Bi_2O_3 and 0.23 per cent. N_2O_5 . In the authors' opinion, there is no justification for regarding this last product as a bismuth hydroxide of the formula $\text{Bi}(\text{OH})_3$. By interaction between equal volumes of bismuth and alkali solutions in the presence of four volumes of water at temperature intervals between 20° and 90° , it was not found possible to effect complete hydrolysis of the nitrate without obtaining a product contaminated with oxide, contrary to the statements of Prèdeaux and Hewis that normal alkali in the cold reacts with bismuth oxynitrate with formation of metahydrate, and that white bismuth hydroxide free from nitrate can be precipitated from a solution of bismuth nitrate in saturated sodium nitrate acidified with nitric acid by treatment with excess of decinormal alkali. Turning next to the formation of bismuth hydroxide by interaction between bismuth nitrate in nitric-acid solution and solution of ammonia, experiment shows that the product is white in colour, and that by direct precipitation, using dilute and concentrated cold and hot ammonia, it is not possible to produce a

* Contribution from the Research Laboratories of the Pharmaceutical Society.

bismuth hydroxide containing less than 6.95 per cent. of N_2O_5 . The authors' experiments with ammonia show that a hydrated bismuth oxide of the standard of the B.P. Codex, 1923, cannot be obtained by the method described. The preparation of bismuth hydroxide by the addition of sulphuric acid to a solution of normal bismuth nitrate in glycerin and water containing excess of potassium hydroxide has been recommended by Thibault for the production of nitrate-free bismuth salts of organic acids. This method is official in the French Pharmacopœia, and has been used by Moser, Herz and Bulla, and others in their investigations on the composition and properties of bismuth hydroxide. Thibault has found that, on drying, a white hydroxide of the composition $BiOOH$ is obtained free from oxysalt; however, the authors point out that special precautions are necessary with regard to the quantity of acid used. If the filtrate is left too strongly alkaline, as in the case of the French Codex formula, glycerin compounds are precipitated, and the product, which chars on heating, yields a much lower percentage of bismuth oxide. If, as directed by Thibault, the mixture is maintained slightly alkaline, a mixture of substances is precipitated, one constituent of which becomes dark grey in colour on prolonged exposure to light, and on drying either in a steam-oven, over sulphuric acid or over caustic potash, a product is obtained which does not correspond to either $Bi(OH)_3$ or $BiO(OH)$. They failed in preparing by this method a product free from sulphate. The following figures were obtained on analysis of samples dried under different conditions:—

(1) Dried over KOH ...	92.08 per cent. Bi_2O_3
(2) Dried at 40° C. ...	93.47 per cent. Bi_2O_3
(3) Dried over H_2SO_4 ...	93.78 per cent. Bi_2O_3
(4) Dried at 110° C. ...	94.52 per cent. Bi_2O_3
$Bi(OH)_3$ requires 89.53 per cent. Bi_2O_3	
$BiO(OH)$ requires 96.27 per cent. Bi_2O_3	

Moser in his experiments used acetic or dilute nitric acid instead of sulphuric acid for the preparation of a pure hydrated oxide; this modification, in the authors' opinion, is no more successful than the original method. His conclusion that a product corresponding approximately in bismuth oxide content to the composition expressed by the formula $Bi_2O_3 \cdot 2H_2O$ can be obtained by drying over caustic alkali has been confirmed, but they found that the precipitated hydrate is not free from nitrate. Moreover, the products obtained by this modified process were not found to yield bismuth oxide when allowed to stand over sulphuric acid or when heated to constant weight at 110° C.

Preparation of Pure Hydrated Oxide.—Before attempting to investigate further the composition of hydrated bismuth oxide and the formation of a metahydrate by the action of heat or caustic alkali, advantage was taken of an observation that pure precipitated oxide, Bi_2O_3 , dissolves slowly but completely in a mixture of glycerin and solution of sodium hydroxide. 12 grams of pure oxide were shaken at intervals for three days, or until completely dissolved, with a mixture of 75 c.c. of glycerin and 175 c.c. of 14 per cent. solution of sodium hydroxide, the solution was poured into a large volume of water, shaken, and allowed to stand overnight, and the precipitated hydrate washed by decantation several times with water, finally washed with alcohol and ether and dried. The product was a very light amorphous substance, white in colour, free from glycerin, and gave no reactions for sodium and carbonate. When dried to constant weight at 40° analysis gave 89.87 per cent. Bi_2O_3 . Dried over sulphuric acid for seven days it gave 89.85 per cent. Bi_2O_3 , and no loss in weight was observed after standing for four days over sulphuric acid *in vacuo*. Dried over potash, it gave the slightly higher result of 90.69 per cent. Bi_2O_3 . In order to determine the effect of drying at higher temperatures, quantities of the material, obtained at 40° and also over potash, were heated to constant weight at 100°, 110°, and at higher temperatures. At 100°, the residue contains 91.98 per cent. Bi_2O_3 . At 110° the residue contains 94.06 per cent. Bi_2O_3 . There was no evidence that this hydrate becomes converted into oxide even at temperatures approaching 200°.

In the experiments described above with alkali no

evidence to the effect that bismuth hydroxide, $Bi(OH)_3$, is converted by contact with alkali into yellow metahydroxide, $BiO.OH$, has been deduced; in fact, evidence to the contrary was obtained by examination of the products of the reaction between freshly precipitated pure hydroxide and sodium-hydroxide solutions ranging from $N/10,000$ to $N/1$. A quantity of moist hydroxide equivalent to 1 gram of $Bi(OH)_3$, was shaken at intervals in each of eleven closed bottles with 150 c.c. of the alkali solution. The mixtures were preserved in a dark cupboard, examined microscopically at intervals, and examined chemically at the end of one month. It was evident that in contact with normal alkali the hydrated oxide was converted entirely at the end of twenty-four hours into yellow needle-shaped crystalline oxide, Bi_2O_3 , and this was confirmed by quantitative determinations. The same yellow crystalline formation was observed in contact with weaker alkali.

CONCLUSIONS

As a result of their experiments the authors conclude that, by the method described in the Codex, it is not possible to prepare a hydrated bismuth oxide of the formula $BiOOH$. They failed to prepare a hydroxide free from oxysalt or oxide by any of the published methods; moreover, they were unable to obtain a compound of the formula $BiOOH$ from the orthohydroxide by the action of heat or by dehydration over sulphuric acid or potassium hydroxide. Further, they found that the action of cold alkali solutions on the moist orthohydroxide is to produce crystalline oxide, and they cannot confirm the experiments of previous investigators that the orthohydroxide yields a stable metahydroxide. From this they would suggest that figures corresponding to such a compound as $BiO.OH$, given by previous investigators, are untrustworthy in that either the substances upon which they worked were impure or the products contaminated with oxide. The only pure hydrated oxide which the authors were able to prepare corresponds to $Bi(OH)_3$; by the action of heat at 110° this loses water and yields a residue containing, approximately, 94 per cent. Bi_2O_3 , which does not correspond to a definite hydrate.

DISCUSSION

The CHAIRMAN having invited discussion, Mr. T. E. MORSON, after congratulating the authors, expressed wonder that bismuth hydroxide ever got into the British Pharmaceutical Codex. It was very difficult to prepare without carbonate getting into it. The sodium hydroxide and glycerin method was costly, and perhaps not of great extra value.

Mr. BOYES believed that, in the view of many medical men, bismuth hydroxide presents certain advantages.

Dr. CROSSLEY-HOLLAND inquired whether any experiments had been undertaken to determine the adsorptive value of bismuth hydroxide compared with more familiar salts—e.g., carbonate and subnitrate. Medical men thought bismuth salts to be of therapeutic value, not only on account of their mechanical action, but also for their adsorptive action. Perhaps a comparative table could be drawn up.

Mr. CORFIELD, replying to the discussion, pointed out that the problem of the authors had been entirely a chemical one.

The next paper was:—

Bismuth and Sodium Bismuth Tartrates

By C. E. CORFIELD, B.Sc., F.I.C., Ph.C., and
F. W. ADAMS, Ph.C.

[ABSTRACT]

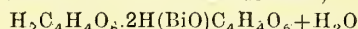
At last year's Conference the authors gave a paper on the preparation and composition of bismuth tartrate, and drew attention to two distinct alkali preparations—neutral and acid sodium bismuth tartrates. They have since been able to examine bismuth tartrate prepared by methods other than precipitation. The methods now described are such that there will be no difficulty in obtaining in a simple manner both neutral and acid preparations of sodium bismuth tartrate of definite composition. Brief reference was made to the two previous

processes before passing to a consideration of bismuth tartrate prepared by Telle's process (interaction between moist bismuth hydroxide and tartaric acid). The authors are of the opinion that this substance is a hydrated molecular compound of tartaric acid and the bismuthyl tartaric acid which is the primary constituent of the Cowley precipitate. The formula they assign to it, $\text{H}_2\text{C}_4\text{H}_4\text{O}_6 \cdot \text{H}(\text{BiO})\text{C}_4\text{H}_4\text{O}_6 + \text{H}_2\text{O}$, accounts for the fact that when titrated with sodium hydroxide solution the amount of alkali added is equivalent to the ratio $\text{Bi} = 3\text{Na}$ at the neutral point. This method yields a pure crystalline substance, but is objectionable, owing to the difficulty of preparing pure bismuth hydroxide; experiments made with precipitated bismuth oxide and tartaric acid show that there is no necessity for the use of the hydroxide.

Experiments were made to determine whether definite soluble compounds are formed with sodium hydroxide.

(1) The product (i.e., bismuth tartrate) was dissolved in the theoretical quantity of normal sodium hydroxide solution to produce a substance having the ratio $\text{Bi} : 2\text{C}_4\text{H}_4\text{O}_6 : 3\text{Na}$. The solution produced was unstable on heating; on evaporation it gave a residue which was neutral to litmus, and readily soluble in cold water. Found: $\text{Bi} = 33.55$ per cent., $\text{C}_4\text{H}_4\text{O}_6 = 48.52$ per cent., $\text{Na} = 11.18$ per cent. A suggestion that the solution contained a compound of the formula $\text{Na}_2(\text{C}_4\text{H}_4\text{O}_6) = \text{Na}(\text{BiO})\text{C}_4\text{H}_4\text{O}_6$ was not supported by its behaviour with alcohol. When treated with an equal volume of strong alcohol, a precipitate was produced which, when dried, was soluble in water and contained $\text{Bi} = 55.36$ per cent., $\text{C}_4\text{H}_4\text{O}_6 = 35.97$ per cent.; thus, this precipitate could not be either $\text{Na}_2\text{BiO}(\text{C}_4\text{H}_4\text{O}_6)_2$ which requires: $\text{Bi} = 33.31$ per cent., $\text{C}_4\text{H}_4\text{O}_6 = 50.25$ per cent., or a pure sodium bismuthyl tartrate of the formula $\text{Na}(\text{BiO})\text{C}_4\text{H}_4\text{O}_6$ which requires: $\text{Bi} = 52.66$ per cent., $\text{C}_4\text{H}_4\text{O}_6 = 37.47$ per cent. The filtrate on evaporation gave a crystalline residue of sodium tartrate. (2) The product was dissolved in two-thirds the previous volume of normal sodium hydroxide, and on evaporation a soluble product was obtained; as might be expected, it was acid in reaction. Found: $\text{Bi} = 35.32$ per cent., $\text{C}_4\text{H}_4\text{O}_6 = 51.05$ per cent., $\text{Na} = 7.1$ per cent.

These two methods are suitable for obtaining both neutral and acid preparations of sodium bismuth tartrate of uniform composition, and, in the case of the acid substance, of definite acidity. In the previous paper the authors showed how Cowley's process could be applied to the production of similar uniform substances, though of different composition. The method just given is simpler, but, as in Cowley's process, the necessity for precipitation at one stage of the process is a disadvantage when large-scale production is contemplated. In an attempt to devise a more convenient method, bismuth tartrate was prepared by interaction between bismuth oxynitrate and tartaric acid, following the method given for the citrate under Solution of Bismuth and Ammonium Citrate, B.P. 1914. Found: $\text{Bi} = 44.21$ per cent., $\text{C}_4\text{H}_4\text{O}_6 = 50.77$ per cent.; ratio $\text{Bi} : \text{C}_4\text{H}_4\text{O}_6 = 2 : 3.2$. The product was soluble in ammonium and sodium hydroxide solutions; when titrated with normal sodium hydroxide the amount required to neutralise it corresponded with the ratio $\text{Bi} : \text{Na} = 2\text{C}_8 : 48$ in the neutral product. These figures indicate a substance to which the formula,



may be assigned. The solution obtained by neutralising with sodium hydroxide was more stable on heating than the Cowley solution. Evaporation gave a soluble residue which was neutral in reaction to litmus. An acid preparation of uniform composition can be prepared by the addition of tartaric acid or sodium acid tartrate to the solution before evaporation.

TABLE OF RESULTS BY DIFFERENT METHODS

	Cowley process	Telle process	Interaction of bismuth oxynitrate and tartaric acid
Per cent. Bi	58.17	37.57	44.21
" $\text{C}_4\text{H}_4\text{O}_6$ { in bismuth tartrate used	35.24	54.27	50.77
Ratio of $\text{Bi} : \text{C}_4\text{H}_4\text{O}_6$..	1.17 : 1	1 : 2.03	2 : 3.2
Ratio of $\text{Bi} : \text{Na}$ in the neutral solution ..	1 : 0.8	1 : 3.0	1 : 2.08
Approximate composition	$\text{H}(\text{BiO})\text{C}_4\text{H}_4\text{O}_6$	$\text{H}_2\text{C}_4\text{H}_4\text{O}_6 \cdot \text{H}(\text{BiO})\text{C}_4\text{H}_4\text{O}_6$	$\text{H}_2\text{C}_4\text{H}_4\text{O}_6 \cdot 2\text{H}(\text{BiO})\text{C}_4\text{H}_4\text{O}_6$

CONCLUSION

Different methods of preparation result in the production of bismuth tartrates of different composition. Both neutral and acid alkali bismuth tartrates may be prepared by solution in alkali, the composition of the product varying according to the nature of the simple bismuth tartrate used.

DISCUSSION

Mr. MORSON pointed out that there are two quite distinct uses, and that it might prove awkward if any alteration were brought about in the composition of this salt, which is described as acid scales. For intravenous injection medical men do not appear to be certain as to what they want, and he anticipated some difficulty in settling on a definite composition. This form of bismuth would not, he thought, be successful in the long run for that purpose.

Mr. ADAMS, in reply, said he could not agree with Mr. Morson that the acid scales of commerce are fairly uniform, as the authors' experience does not confirm this. Their intention was to suggest a standard neutral substance for use in place of acid substances.

The next paper was:—

The Composition of Bismuth Citrate and its Reactions with Alkalis*

By F. W. ADAMS, PH.C.

[ABSTRACT]

THE paper is the result of an endeavour definitely to determine the composition and constitution of bismuth citrate prepared by different methods. An account of its reactions with ammonia and sodium hydroxide is also given. Products obtained by different methods have been examined. The methods are described, and the results of analysis are contained in the table. In addition to the prepared samples, four typical specimens of commercial citrate were obtained and analysed:—

A. Method of B.P. (1914), under solution of bismuth and ammonium citrate, in which bismuth oxynitrate is mixed with citric acid and water.

B. Method of B.P.C. (1923) and U.S.P. (8), in which bismuth subnitrate, citric acid, and water are mixed and heated on a water-bath until a drop of the liquid gives a clear solution with ammonia.

C. Method recommended by Cowley: 70 gm. of bismuth oxynitrate dissolved in 100 c.c. of diluted nitric acid (50 c.c. nitric acid (s.g. 1.42), 50 c.c. water) by gentle heat; added a solution of 50 gm. of citric acid and 58 gm. of sodium bicarbonate in water; lastly, 29 gm. of sodium bicarbonate in solution in water. Diluted with water to four times the volume of the mixture, allowed precipitate to settle, decanted liquid and washed free from nitrate. Dried in steam oven.

D. Precipitation from glycerin by sodium citrate. 50 gm. bismuth nitrate were dissolved in a solution consisting of 19 c.c. glycerin and 30 c.c. of water. To this solution added 36 gm. sodium citrate dissolved in 200 c.c. of water. Filtered off precipitate and washed well. Dried in a steam oven.

E. As D, except that the sodium citrate solution was previously diluted to 2,000 c.c. and the bismuth solution added to it. The precipitate was allowed to stand in contact with the liquid for four days.

F. Precipitation from solution of normal bismuth nitrate in glycerin by adding a strong solution of citric acid in water.

G. Precipitation from solution of mannitol bismuth nitrate by means of citric acid solution by the method of Vanino and Hartl.

H. About 50 gm. of moist bismuth hydroxide was placed in a wide-mouthed bottle with 35 gm. of citric acid and a little water. The mixture was set aside with occasional shaking for 48 hours. The precipitate was washed free from acid and dried in a steam oven.

I. Method of Telle, in which freshly precipitated bismuth hydroxide is boiled with citric acid and water for five minutes. The precipitate was washed and dried in a steam oven.

J. By interaction of moist bismuth hydroxide with excess of citric acid in the cold. Ten gm. of bismuth hydroxide was mixed with 16 gm. of citric acid dissolved in 25 c.c. of water.

* Contribution from the Research Laboratories of the Pharmaceutical Society.

The mixture was allowed to stand for two days. The precipitate was washed and dried over sulphuric acid.

ANALYSIS OF SAMPLES

The Bi and $C_6H_5O_7$ content of the prepared samples and four commercial samples was determined. The preparations were all white amorphous or microcrystalline powders, acid in reaction, and completely soluble, with one exception, in excess of ammonia. Five of the samples prepared from the subnitrate contained nitrate, while two were free from this contamination. The samples C, D, and E, which contained larger proportions of bismuth than the others, darkened on exposure to light. The commercial samples were very similar, and all contained a small proportion of nitrate.

COMPOSITION AND REACTION WITH ALKALIS

An examination of the results of analysis reveals the fact that in one case only, that of the sample J, has a reasonably pure substance been prepared, the ratio Bi : $C_6H_5O_7$ being almost 1 : 1. It is significant that C, D, and E, which contain a much higher proportion of bismuth than the others, are obtained from solutions which are much less acid than those from which the remainder are precipitated :—

Sample	Per cent. Bi.	Per cent. $C_6H_5O_7$	Per cent. N_2O_5	Solubility in NH_4OH	Solubility in excess of N/1 NaOH	Ratio Bi. — $C_6H_5O_7$
A	51.49	43.98	0.24	Complete	Insoluble	1.07 : 1
B	51.69	43.26	0.24	Complete	Insoluble	1.09 : 1
C	56.66	33.23	0.00	Precipitates on standing	Insoluble	1.55 : 1
D	61.56	29.04	0.45	Partly soluble	Insoluble	1.92 : 1
E	53.20	32.76	0.00	Precipitates on standing	Insoluble	1.48 : 1
F	50.63	43.90	0.28	Complete	Insoluble	1.03 : 1
G	50.71	44.67	0.35	Complete	Insoluble	13.0 : 1
H	50.75	44.06	0.00	Complete	Insoluble	1.05 : 1
I	51.93	44.58	0.00	Complete	Insoluble	1.06 : 1
J	49.98	44.91	0.00	Complete	Insoluble	1.01 : 1
Commercial Samples						
K	51.46	—	0.17	Incomplete	—	—
L	51.47	—	0.17	Complete	—	—
M	51.46	43.35	0.14	Complete	—	1.03 : 1
N	51.18	—	0.21	Complete	—	—

Quantities of A, C, I, and J were titrated with standard sodium hydroxide solution to ascertain whether the amount of alkali required to neutralise them was equivalent to a definite ratio Bi : Na. The results obtained showed that a definite atomic ratio did subsist between bismuth and sodium in each case. Titrations with normal ammonia solution gave corresponding results. Of the four, C was the only one which was not completely soluble at the neutral point. Cowley's suggestion that the acidity is due to the acid nature of the hydrogen atom in the OH group of the citrate radicle was proved to be incorrect.

From consideration of the alkali titration figures for the sample J it is observed that bismuth citrate prepared by this method acts as a dibasic acid, a property due to the fact that one of the acidic hydrogen atoms of the citric acid molecule is replaced by the monovalent bismuthyl BiO group. The formula, $H_2C_6H_5O_7(BiO)$, assigned to it by Duncan is therefore confirmed, and the name monobismuthylcitric acid expresses its composition more accurately.

$H_2C_6H_5O_7(BiO)$ requires 50.12 per cent. Bi. 45.54 per cent. — $C_6H_5O_7$.

Found (in sample J), 49.98 per cent. Bi. 44.91 per cent. — $C_6H_5O_7$.

The products prepared by methods A, B, F, G, H, and I appear to be less pure specimens of this compound. The samples C, D, and E are more complex; D is apparently an impure specimen of a substance to which the formula $H_2C_6H_5O_7(BiO)_2$ may be assigned, while C and E correspond approximately with $H_2(C_6H_5O_7)_2(BiO)_2$, but may be mixtures of approximately molecular proportions of $H_2C_6H_5O_7(BiO)$ and $H_2C_6H_5O_7(BiO)_2$.

At first sight it appears reasonable to conclude that by dissolving this bismuth citrate, in which the ratio of Bi to $C_6H_5O_7$ is 1 : 1, in sodium hydroxide and

ammonia, the resulting solutions contain, respectively, compounds of the composition $Na_2C_6H_5O_7(BiO)$ and $(NH_4)_2C_6H_5O_7(BiO)$, but the evidence obtained from an examination of such solutions does not support this contention. Moreover, the ratio of bismuth to ammonia in the solution definitely shows that solution is not due to the formation of bismuth hydroxide, $Bi(OH)_3$, and subsequent solution in the ammonia citrate, $(NH_4)_2C_6H_5O_7$, formed. These views do not explain satisfactorily the solution of bismuth citrates containing a higher proportion of bismuth or the formation of solutions having similar properties by dissolving the bismuth citrate in solution of alkali citrate. The authors then consider the effect of fractional precipitation by means of alcohol from a neutral solution of monobismuthylcitric acid in normal sodium hydroxide solution.

The main conclusions arrived at are :—

Bismuth citrate prepared by the usual methods is not a normal salt corresponding to the formula $BiC_6H_5O_7$, but a more or less impure monobismuthylcitric acid of the formula $H_2C_6H_5O_7(BiO)$ as suggested by Duncan. When precipitated from less acid solutions it contains a higher proportion of bismuth, and evidence has been obtained of the existence of a dibismuthylcitric acid of the formula $H_2C_6H_5O_7(BiO)_2$ which behaves as a monobasic acid, although it has not been obtained in an uncontaminated condition. The acidity of these substances, by comparison with compounds obtained from succinic and tricarballic acids, is not due to the hydroxyl group of the citric acid, as contended by Cowley, but to the presence of free carboxyl groupings. The evidence of former writers that sodium and ammonium salts of the composition $Na_2C_6H_5O_7(BiO)$ and $(NH_4)_2C_6H_5O_7(BiO)$ are present in solution when bismuth citrate is dissolved in the corresponding alkali is not conclusive; the view that the solution in ammonia is due to formation of bismuth hydroxide and ammonium citrate is untenable. From the examination of the products of fractional precipitation with alcohol, it seems more probable that the effect of alkali is to produce more complex alkali bismuth citrates, which are dissolved in the presence of simple alkali citrate formed during the reaction.

The author acknowledges the assistance rendered by Mr. C. E. Corfield and Mr. G. R. A. Short.

DISCUSSION

The CHAIRMAN remarked that bismuth citrate had largely taken the place in discussions occupied by sweet spirit of nitre in the last generation. Mr. Adams had cleared up certain difficulties.

Mr. DOTT believed that there were far more of these meta compounds than was generally supposed—compounds which were a mixture of normal and acid salts.

The final paper at the morning session was :—

A Note on Chloral Hydrate in Suppositories

By THOMAS LEWIS and F. J. DYER

[ABSTRACT]

THE Codex mentions the use of chloral hydrate as an antidote for strychnine and as a hypnotic, in both cases by rectal administration. Chloral hydrate, when mixed with cocoa butter, is known to cause a lowering of the melting-point of the latter, a phenomenon which renders the finished suppository liable to become very soft in summer weather. This investigation was undertaken to try to furnish answers to the following queries :—

(a) What is the maximum quantity of chloral hydrate which can be dispensed in a suppository under summer conditions, without the use of wax?

(b) For suppositories containing more than the quantity found under (a), how much wax is required "per grain-excess" of chloral hydrate?

(c) What are the best methods of manipulation in the above cases?

The tables given [in the paper—summarised in this abstract] are a record of the experiments made both during the cooler months of the year (average laboratory temperature 17° C.) and during warmer climatic condi-

tions (average laboratory temperature 26° C.). Ice cooling has been used only where the mass could not otherwise be brought to a consistency in which it could be handled. Batches of six suppositories were made by the methods outlined, and the following is a model of the calculations:—

For 3-grain Chloral Hydrate Suppositories

Total weight of suppositories = 7 x 15 (allowing for 7)	105 gr.
Deduction in respect of chloral hydrate (density compared to cocoa butter = 2) $7 \times 3 \div 2$...	10½ gr.
Weight of cocoa butter used	94½ gr.

Method 1.—Weighed the calculated quantity of chloral hydrate, rubbed gently to a powder in a mortar. Melted the cocoa butter, stirred in the powdered chloral hydrate until dissolved, and poured when of a creamy consistency.

Method 2.—Powdered the chloral hydrate and incorporated this with one-third of the cold cocoa butter in a mortar, working it up into a mass. Melted the remainder of the cocoa butter, and added the mass to it; stirred vigorously, warming very gently if necessary, and poured into mould when of creamy consistency.

Method 3.—Allowed 1 gr. of white wax for every grain of chloral hydrate used in excess of four. Melted the wax in a dish on a water bath, added the cocoa butter, stirred vigorously, and lastly added the previously powdered chloral hydrate, warmed if necessary, stirring vigorously, and poured when of a creamy consistency.

[Table I gives records of nineteen batches made without wax, in winter and summer conditions, with quantities of chloral hydrate ranging from 2 gr. to 5 gr. in each suppository.] The foregoing results led to the conclusion that while suppositories made in winter time, containing up to 5 gr. of chloral hydrate, could be obtained readily, in summer temperatures a good deal of uncertainty prevailed. Batches 13 to 19 showed that, working under similar conditions, there is no certainty of uniform results, and that the use of white wax did not materially assist the setting power of the suppository mass. Further experiments were made, using variable proportions of white wax, and, as an alternative, spermaceti. The results are recorded in Table 2. In assessing the value of the suppositories the following tests were made:—

(a) Suppositories were washed rapidly in cold water, dried upon filter paper and placed in a cardboard box, and stored in a cool place.

(b) A longitudinal section of a suppository from each batch was examined with a hand lens for oily drops or granular appearance.

The merit of the various samples was decided after keeping them in the cardboard box (a) for twenty-four hours, and examining (1) the condition of the suppositories themselves, (2) the box for presence of stains. [Table II gives records of twenty-three batches made, in summer conditions, with 5 gr. or 6 gr. of chloral hydrate and maximum quantities of 2 gr. of white wax or 4 gr. of spermaceti in each suppository.] From these experiments it appears that the addition of wax in the proportion of "1 grain for every grain of chloral hydrate exceeding four" did not materially help the overcoming of summer conditions. Similar remarks apply to the case in which "1½ grains of wax per 1 grain of chloral hydrate exceeding four" was the method used, although the greater proportion of wax seemed to be justified by a slight improvement in the keeping properties. When a larger proportion of wax was used—viz., "2 grains for every grain of chloral hydrate exceeding four," the results seem to justify the addition of wax. A further series of confirmatory experiments was made and is reported upon in Table III [which deals with twenty batches prepared in conditions similar to those of Table II]. It is known that the choice of cocoa butter as a suppository base is governed by its low melting-point—viz., 30–33° C., compared with the average body temperature, 37° C. The addition of white wax or spermaceti to raise the melting-point involves the risk of the suppository being slow to melt when administered.

The following results should allay any such fears: A water-bath maintained at 34° C. (using a thermostat) was employed and test tubes were floated in it, thin leaden collars being used to keep them immersed. 5 c.c. of water was placed in each, and after ten minutes' warming a suppository was dropped into the tube, which was shaken at intervals and examined after five minutes (probed with glass rod to test consistency). [Table IV gives the results of examination of six specimens after two minutes and after five minutes.] If, therefore, a suppository melts or even softens under the above conditions in five minutes, it is reasonable to assume that, when subjected to the higher temperature of the body and the action of the rectal muscles, complete melting will result in an even smaller interval of time.

CONCLUSIONS

The investigations seem to indicate:—

(1) That 4 gr. of chloral hydrate is the maximum quantity which can be dispensed on a summer's day, using cocoa butter only as base.

(2) That for quantities in excess of 4 gr. of chloral hydrate "two grains of white wax (or spermaceti) per grain of chloral hydrate" gives better results than smaller quantities of wax.

(3) That Method No. 2 answers well for cases arising under (1), and the method used in Batch No. 20 is successful for such cases as are met under (2), viz., melting the substance of higher melting-point and adding those of lower melting-point to the molten mass, thus keeping the temperature as low as possible.

The authors wish to thank Miss K. M. Stalker for her valuable help in making some of the above batches of suppositories and for her general interest in the investigation.

DISCUSSION

Dr. BRYANT (Aberdeen) asked what lubricant had been used.

Mr. FINNEMORE (London) inquired if the authors had considered the use of any other bases.

Mr. QUANT (Torquay) suggested the employment of such substances as anhydrous wool fat and stearin as bases.

Professor GREENISH (London) emphasised the practical importance of the paper, and that it was of the type required. He hoped the authors would be able to carry their experiments further.

Mr. GAMBLE (London) raised the point as to whether chloral hydrate suppositories have any practical importance outside the examination room and the colleges.

Mr. PECK (Cambridge) expressed admiration for the paper and the way it was delivered. He also commented on the number of papers from the Pharmaceutical Society's Research Laboratory.

Mr. W. BROWNE (London) asked if the authors had experimented with the cold method of making the suppositories. He would have used some wax in any case, and so was highly interested in the paper.

Miss WINCH (Sunderland) suggested a base of oleic and stearic acids.

Mr. DYER, in reply, said the lubricant used was soap liniment without glycerin. They had tried almond oil, but it made little difference. They had not up to the present tried other bases. The investigations had largely been confined to chloral hydrate in the proportions which are usually dispensed, and had been commenced partly as the result of the examinations, and also in view of the fact that chloral hydrate suppositories are frequently administered to children in South Wales.

Seven papers were down on the official programme for presentation at this session, but at this point it was discovered that the available time had expired. The chairman thereupon announced an adjournment for luncheon, leaving the fate of the two remaining papers uncertain. Those present were given to understand that their presence in the afternoon was urgently required, and that the section would meet in the old Sessions House of the Guildhall, in which, as the chairman subsequently remarked, the truth (and the whole truth) was the rule.

Delegates' Meeting

A meeting of the delegates from the various branches of the Pharmaceutical Society of Great Britain was held in the Guildhall on July 22 at 2.15 p.m., the President, Mr. F. Pilkington Sargeant, Ph.C., in the chair. After extending a welcome to the delegates, the chairman called upon the Vice-President of the Society, Mr. Philip F. Rowsell, Mayor of Exeter, to open the discussion on the questions from the International Pharmaceutical Federation relating to the control of pharmaceutical specialities (see *C. & D.*, April 5, p. 494).

The Control of Pharmaceutical Specialities

Little did I think, stated Mr. Rowsell, when I suggested at the April Council meeting that a letter received from the International Pharmaceutical Federation, enclosing a questionnaire dealing with the sale of proprietaries and pharmaceutical specialities, should be sent to our branches for consideration and report, that I should be called upon to introduce the subject at this conference. The whole question is one on which I am convinced many and varied opinions exist; therefore becomes the greater the necessity for the subject being fully discussed. I propose asking you to consider the subject under three headings, set out to cover generally the points raised, and which are as follows:—

(1) To what extent is it advisable that there should be State control over the manufacture, composition, advertising and sale of pharmaceutical specialities?

(2) To what extent should the preparation and sale of such specialities be restricted to pharmacists?

(3) Is it desirable and possible to provide international regulations dealing with the manufacture, advertising and sale of pharmaceutical specialities?

In dealing with these under separate headings there are various points which we may well consider with advantage, and in the course of so doing I shall have occasion to refer to the report of the Patent Medicine Enquiry Committee, of which Sir W. S. Glyn-Jones was a member, and before which our then President, the late Mr. C. Ballen, gave evidence, and also the Proprietary Medicines Bill that passed through the House of Lords in 1920. Let us first take the question as to what extent it is advisable that there should be State control over the manufacture, composition, advertising and sale of pharmaceutical specialities and inquire into the position existing in this country at the present time. On examination of the facts we shall find that we have six Acts of Parliament which deal with proprietary medicines, namely: (1) The Stamp Act; (2) the Pharmacy Act of 1868-69 and the Pharmacy and Poison Act of 1908; (3) Merchandise Marks Act of 1887; (4) Sale of Food and Drugs Acts of 1875 and 1899; (5) Indecent Advertisement Act; (6) Larceny Act. There are also four Departments of State, namely: (1) Privy Council Office; (2) Home Office; (3) Local Government Board; (4) Patent Office; and two Statutory Bodies, namely: (1) The General Medical Council; (2) the Pharmaceutical Society of Great Britain. We shall come to the conclusion, which may be well summed up in the words of the

SELECT COMMITTEE ON PATENT MEDICINES

"For all practical purposes British law is powerless to prevent any person from procuring any drugs or making any mixture, whether potent or without any therapeutical activity whatever (so long as it does not contain a schedule poison), advertising it in any decent terms as a cure for any disease or ailment, recommending it by bogus testimonials and the invented opinions and facsimile signatures of fictitious physicians, and selling it under any name he chooses, on the payment of a small stamp duty, for any prices he can persuade a credulous public to pay." Now with reference to other countries and our own Dominions, the report, after an exhaustive examination, says: "The sale of remedies of which the composition is secret is restricted in varying degrees by law in the principal foreign countries and in the British Dominions." The report further continues: "This was confirmed to us in evidence by a number of proprietors of secret remedies, who, giving various reasons for their actions, informed us that as a matter of fact they export to foreign countries

little or none of their products." The Proprietary Medicines Bill which passed through the House of Lords in 1920 sought to give effect to the recommendations of the Select Committee, to which reference has already been made. It contains no provisions which were not specifically recommended by that committee, and includes all the most important recommendations. It seeks to establish a register of proprietary medicines and appliances and of the owners thereof, and to prohibit the sale of any unregistered proprietary medicine or appliance. It provides for the appointment of a Registrar and the keeping of a register containing particulars with respect to the ingredients and composition of the medicines, but severe punishments are to be inflicted for the unauthorised disclosure by the Registrar or any other persons of the formula of any registered medicines. The expression, "proprietary medicines," is defined in the Bill to mean a medicine which is held out by advertisement as of use for curative or remedial purposes, and which is also sold under a trade name or manufactured by a secret process. The Bill prohibits certain practices, chiefly in connection with advertisement, which the Committee considers undesirable, or the sale of remedies purporting to cure, let it be well noted, certain diseases, such as consumption or cancer, is prohibited. The opinion was expressed by several of the expert witnesses before the Committee, which, it will be remembered, concluded its sittings in 1913, that the effect of the National Health Insurance Acts would result in a very large reduction in the sale of patent medicines. Experience has, however, shown that this has not been so, but exactly the reverse. In the recent report of the Commissioners of Customs and Excise it is recorded that the net receipts from the Medicine Stamp Duty, which in 1914 totalled £360,377, had increased by 1923 to £1,219,703. It is true that the duty was then double that of 1914, but it will be observed that the receipts were almost fourfold; also the number of patent medicine vendors, which in 1914 was 43,156, increased last year to 48,323, an increase of about 10 per cent. The position is, therefore, that the proprietary medicine trade in this country, which is of enormously increasing magnitude, is carried on under conditions of freedom quite unknown in other countries, and, in fact, except in so far as proprietaries coming within the scope of the Poisons and Pharmacy Acts, is subject to almost no restriction of importance. The 1920 Bill sought to remedy the dangers to public health and the flagrant frauds, which are matters of common knowledge and, indeed, were so amply proved by the report of the Select Committee; therefore, whatever opinions are held with reference to that particular Bill, it must be admitted that it is a matter of urgent public necessity that steps should be taken to remedy the more flagrant evils and abuses that exist. It must, of course, be admitted that patent and proprietary medicines differ widely in character. At one end of the scale is the valuable scientific preparation and at the other is the mere vulgar swindle. This was recognised by the Select Committee in their report, as they divided these remedies into two chief classes:—

(a) Non-secret preparations and those with merely secret excipients, for example: Aspirin, adrenalin, mixtures of bismuth with pepsin, preparations in tabloid form, etc.

(b) Secret remedies, graded from simple household remedies right through and including dangerous remedies and drugs to be used for improper purposes to those making grossly exaggerated claims or even actually fraudulent ones.

We now arrive at the stage when we have to consider what steps should be taken to control the manufacture, composition, advertising and sale of pharmaceutical specialities in this country, and to me it is evident that one of two courses must be adopted. First, it is open generally to accept the conditions laid down in the 1920 Proprietary Medicines Bill, the provisions of which I just now roughly outlined to you; or, on the other hand, to make it incumbent upon manufacturers to disclose on their labels the composition of the article, as is done in many other countries at the present time. It would also be necessary to set up some machinery for controlling the advertising thereof. To patent-medicine manufacturers generally, I am inclined to think, either scheme would not prove very acceptable, but of what might be regarded by them as two evils I am inclined to think the former scheme would be preferred.

SALES CONFINED TO CHEMISTS

To what extent should the preparation and sale of specialities be restricted to pharmacists? I suggest that articles bearing the Patent Medicine Stamp and not, of course, coming under the Poisons and Pharmacy Acts, and regulated by one or the other of the two schemes outlined, should be sold by those holding a Patent Medicine Licence, as at present, but I feel convinced, and I shall be interested to see how far I carry the Conference with me in this, that we should take up a very strong attitude and press that all articles in the B.P., the B.P.C., and Known, Admitted and Approved Remedies should be sold, with certain exceptions, by pharmacists only. These exceptions should be drugs and chemicals used in general commerce and required for commercial use in the various trades and businesses. For this purpose it would be necessary to compile a list of such excepted articles, and although this would not be an easy matter I am nevertheless convinced that this could be done. In this way the public would be supplied by those who have special knowledge of the articles dealt in. For the sake of clarity let us take a few examples. On the one hand, sod. bicarb., crem. tartar., tartaric acid, etc., I think we should all agree, could not be controlled; but, on the other hand, such articles as spirits of sal. volatile, sweet spirit of nitre, camphorated oil, etc., are articles that should be sold only by the pharmacist. Is it desirable and possible to provide international regulations dealing with the manufacture, advertising and sale of pharmaceutical specialities?—will not detain us long—in fact, under present conditions it can be dismissed almost in a sentence. It may be desirable, but under present conditions, seeing that we have practically no control ourselves, it is not possible. When we have a measure of control in this country then the question of international regulations may well and rightly be considered. Now, in conclusion, let me say that I regret I have been unable to go more fully into the various questions I have brought before you to-day, yet I feel sure I shall have your sympathies when I say the time at my disposal since I was asked to introduce this subject has been very limited. Nevertheless, I trust I have put before you sufficient material to warrant the whole question being fully discussed in all its bearings, and chiefly as affecting our own particular calling. There is, I know, plenty of room for difference of opinion on the points raised, but at the same time I trust the result will be that some definite policy may be formulated, and that those who are specially fitted by their training and knowledge may one day have placed in their hands the distribution of those articles that by right is theirs.

DISCUSSION

In inviting discussion, the PRESIDENT remarked that the first question to be considered was: To what extent is it advisable that there should be State control over the manufacture, composition, advertising, and sale of pharmaceutical specialities?

Mr. W. BROWNE (London) expressed the opinion that they did not want any more State control.

Mr. ALFRED HIGGS (Kingston-on-Thames) said he had listened very attentively to the remarks of the Vice-President, who, by his speech, wanted to scrap the Medicine Stamp Act. That was a matter that had been considered by local associations throughout the country and also by the P.A.T.A. Council. They must remember that through the energy and ability displayed by their secretary, Sir William Glyn-Jones, after the Act of Parliament had been in existence for a century or more, he got the High Court decision upon known, admitted and approved remedies, and he (the speaker) was convinced that if once they stirred up that question of the Medicine Stamp Act, they would have an Act formulated, on the report of the Select Committee, that would condemn the known, admitted and approved remedies, and take away the very great privileges which belonged to the chemist and druggist. He asked them to think seriously before they set the Council in motion, for the Customs authorities were anxious to condemn the Medicine Stamp Act, which was antiquated, and chemists would be in a far worse state than they were at the present time. The P.A.T.A. council were

of the opinion that the wiser course was to let sleeping dogs lie. (Applause.)

Mr. G. A. MALLINSON (London) said that there were two points of view, as far as they were concerned; there was the public point of view, which they ought to put first, and there was their own point of view as business men and pharmacists. He thought not one of them would deny that in the public interest it would be better that quack medicines, secret medicines, and preparations of that kind should be forbidden. They had all of them had experience of preparations of which they had been ashamed to sell, and yet, practically speaking as business men, they had been bound to sell, because they could not possibly turn people away. When they came to consider their own private point of view, he was in much more agreement with Mr. Higgs. Without a doubt, until they could turn the trend of legislation somewhat differently to what they had been able to do in the past, any regulations instituted for controlling patent or proprietary medicines would inevitably tend to the disadvantage of the pharmacist as a business man. From a business point of view, it was possibly going to be against their interests unless they could get a modified form of Bill, something which would give them, perhaps, a measurable sale of preparations which were genuine, preparations which had their formula either known or stated on the label. It seemed to him that the only way out in the public interest, at any rate, and in their own interest, was a compromise between the two. It was not an absolute prohibition: that he did not think the public would accept very readily. The public, perhaps, would kick harder than they would at having their favourite medicines cut off and being compelled to go to a doctor for them.

Mr. W. J. SHEPPERD (Barnstaple) urged that no interference with the rights and privileges of chemists and druggists should be permitted, if possible. Sal volatile, he said, was not quite as the Vice-President had stated. It was regulated by the Excise laws, and also was permitted to be sold only by chemists and druggists, although he knew that that was not fully carried out. It was not always wise to let sleeping dogs lie. With reference to State control, there should be no State control of the manufacture of so-called patent medicines and pharmaceutical specialities. The enforcement of any regulations that might be made should be the function of the Pharmaceutical Society. All so-called patent medicines and pharmaceutical specialities should have printed on the box, bottle or container, and on the wrapper, the name and percentage content of each, and all of the poisons named in the Schedule. For the last fifteen years he had had a proprietary of his own, upon which he gave almost the whole of the formula, and it had not in any way militated against the sale of it. The same regulation should apply to the alcoholic content, expressed in Great Britain in the terms of proof spirit percentage. Any so-called patent medicine which did not conform to the regulations should cause the manufacturer to be liable to prosecution. In the matter of analysis, a margin of error, to be agreed upon, should be allowed. Every advertisement should contain the name, or names, of the poison or poisons, and the alcoholic content, and the full name and address of every individual supplying a testimonial, recommendation or analysis, and also the date. There were many bogus testimonials, and they often saw testimonials given by "Dr. X. Y. Z." He thought that was diametrically opposed to the wishes of the General Medical Council.

Mr. McMILLAN (Glasgow) thought there was a little confusion as to what they might discuss as pharmaceutical specialities. They in the West of Scotland discussed that very fully, and came to the conclusion that it would be far better to leave the whole thing alone. (Hear, hear.) If all rumours were true, they had a much harder fight before them. Their feeling was that it would be far better to drop the whole affair, and inform the International Federation that they did not consider it was a question that could be at the moment discussed with any advantage to the craft. (Applause.)

Mr. KNOTT (Bolton) said he agreed with the last speaker. They discussed that matter in Bolton some

time ago, and decided that the whole matter should drop. If such new Acts were passed, they would have regulations, control, State control and inspections which would make their lives an absolute misery.

Mr. FOSTER (Seaham Harbour) said the Proprietary Medicines Bill was at present pigeon-holed, and he thought it would be very inadvisable for them to do anything to get it out of that pigeon-hole. There was one anomaly in the "P. J. F.," and that was the trade-mark. At the same time, he would rather that the anomaly remained than to have regulations made.

Mr. SHIRTLIFF (London) was of the opinion that they as chemists should continue to sell those things as at present; but if it was at any time put to them as to whether they were in favour of quackery, then he thought they should have something prepared to show that they were not in favour of that quackery which went on at the present time. A great majority of the proprietary articles did not come under the heading of quackery, but there were certain instances which could be put forward which undoubtedly came under that heading, and they as pharmacists should not countenance that quackery in any way. If they said, "Let things lie absolutely as they are at present," then to a certain extent they bolstered up the quackery which went on. In any inquiry which went to a Government department, and if a question with regard to those medicines was put forward, he hoped, in the interests of the manufacturers of those articles, they would impress upon that Government department the necessity for a special committee to consider the quackery that went on, and that a manufacturer or manufacturers should have an opportunity of appearing before that committee. He did not think it fair, from the manufacturer's point of view, that any Government department, sitting *in camera*, should be entitled to say, "This is a case of quackery."

Mr. LEES (Oldham) asked whose duty it was to see that the known, admitted, and approved remedies privilege granted to chemists was carried out. He knew it was granted in all parts of the country by nearly all the qualified drug stores, singly and collectively, and he would like that matter to be more closely inquired into and enforced.

Sir WILLIAM GLYN-JONES explained that in anything he had to say he could only speak for himself, because no organisation that he had had anything to do with had, so far as he knew, any policy at all on that subject, including the Pharmaceutical Society. The question that they were at the moment discussing was to what extent it was advisable that there should be State control over the manufacture, composition, advertising, and sale of pharmaceutical specialities. If he might say so, he entirely agreed with Mr. Mallinson, who attempted to bring the discussion at an early stage on the right level, and he (the speaker) doubted whether it had been continued on that level. "The point for the meeting was not whether pharmacists in business in their own interest desired any change in the law, nor whether anything at all in their interest was advisable, but they were asked there if it was advisable—"advisable" obviously meaning in the general interest of the public—that there should be any further control than at present existed in regard to the question of proprietary medicines. When a question of that sort was put to a meeting like that, it was quite futile to begin to discuss, "Where do we come in?" If what was desirable in the interest of the public was not desirable in their interest, whatever they did their interest would go under, and rightly so. (Applause.) That was a public meeting, and it was no good anybody putting forward any suggestion about letting sleeping dogs lie in the interest of pharmacists. He very much questioned whether, in the long run, it would be to the interest of pharmacists; but that was beside the question. The real point was, "Is it advisable, in the interest of the community at large, that in this matter sleeping dogs should be let lie?" The Vice-President had referred to the Select Committee. He wanted to warn everybody that a Select Committee to the House of Commons was unlike departmental com-

mittees in the respect that they had not a unanimous report, a majority report, or a minority report there. If they saw the minutes, they would find that almost every line of the report was the subject of a division in the committee, numbering about fifteen. He thought he was right in saying that if that committee had been asked whether the present condition of things was perfect, whether it did require any change or not, while there had been any amount of difference of opinion as to what the changes ought to be, there would have been a unanimous decision that something was required. The Association of Manufacturers of British Proprietaries was also committed to the view that some change in the legislation was required. It was an extraordinarily difficult thing, in a complex matter of that sort, to legislate fairly and properly, and he had got more or less a horror of that kind of legislation. A good deal, he thought, could be done, quite well and proper, and his own view was it was on the lines upon which they were going. The Select Committee on Patent Medicines recommended that the formula of every proprietary medicine should be lodged with a Government department. Some people asked that it should be placed upon the label. He told them quite frankly, as one who was a member of that committee, if it was a legitimately fair and useful preparation which owed its merit to the enterprise of some particular individual, they had no right to deprive that individual of the goodwill in his proprietary. But the line to take was, surely, the line which had been indicated by Mr. Shepperd, that where a medicine contained an article which was, for some reason or other, of some danger, or deleterious, the presence and proportion of that article should be indicated on the label. He was quite certain that on that at this moment the Government could carry a Bill without opposition. He was quite satisfied that the patent-medicine proprietors would agree to that. In that Bill there was a clause giving the minister power to provide that, in addition to registering the proprietary, the name and quantity of any poisonous or dangerous substance forming an ingredient of any registered medicine should be stated in the prescribed manner on the labels. Then it was to be open to the minister to declare what was to be a dangerous or a poisonous substance, and they would have had brought into existence a list of substances, either dangerous or poisonous, which were not scheduled poisons. He suggested that that would be a very detrimental step, both in the point of view of the public and from the point of view of pharmacy. Some of them were very shocked at what they thought was the acquiescence of the Pharmaceutical Society in the Dangerous Drugs Amendment Bill, which provided that the name of the scheduled poison should be placed on the label. That was the law of the land, and an Order would soon be made, he supposed, giving effect to it. A good many people did not see that if that were introduced as part of the law of the land, they had taken away the main argument for that very much more difficult and onerous clause, because they had provided, through the Pharmacy Act, the means of having the dangerous substance disclosed on the label. He asked them to note further that instead of leaving it to a minister or a Government department to say what they should add to the list, it was in the province of the Pharmaceutical Society to add to those substances through the Poisons and Pharmacy Act. So they killed two birds with one stone. To-day lots of them knew of more or less potent drugs that ought to be scheduled poisons. There was very considerable difficulty in getting the consent of the Government departments to their being scheduled; but if it was, as it would be, the law of the land, then they had brought into being an additional reason for adding to the Poisons Schedule a large number of, in his view, potent drugs, which were not there now, but which ought to be there. He asked them not to approach every subject of that sort from the point of view, "What difference is it going to make in my business next week, or the week after?" The long view was the right view, and he was satisfied himself that every man

in that room knew that there were to-day abuses of the law in connection with proprietary medicines that there was at present no power to prohibit, and that they would all say they ought to be prohibited. He maintained that it was the business of the Pharmaceutical Society to come to the help of the authorities, with their expert knowledge, and try to provide remedies, which would work upon lines consistent with the welfare of pharmacies as well as that of the general public. (Applause.)

Referring to the first question in the *questionnaire*, the PRESIDENT said he thought it was obvious that it was not competent for that meeting of delegates at that time, having given the amount of attention they had to it, to answer that question properly. It was certainly not possible to say "to what extent." What they could say, if they wished, that it was advisable that there should be State control, or not advisable. He was not quite certain even whether it was necessary to go so far as that.

Mr. CLEWORTH (Manchester) said the Manchester Association turned that thing down because they felt they were not in a position to adjudicate on such a wide problem, and after hearing Sir William Glyn-Jones that afternoon, he had come to the conclusion, speaking personally, that the wisest plan would be, with regard to it being advisable whether there should be State control, for it to be left entirely in the hands of the Pharmaceutical Society for them to decide, and then at some future date to issue, as they had done in the past, a letter to the different branches of the Pharmaceutical Society throughout the country for further discussion. That was a point he wished to emphasise, and he was very pleased to put that matter forward. Replying to the President, Mr. Cleworth said he made that proposition with regard to the whole of the subject.

Mr. FOSTER (Seaham Harbour) seconded.

Mr. LUCAS (Brixham), supporting, said the question they were discussing that day bristled with difficulties. It was apparent, he thought, to everyone that it was so many-sided that it was extremely difficult to pass a resolution dealing with it without running some risk of doing considerably more harm than good. The mere fact that proprietaries bore a much more rational rate of profit now than they did in the past was in itself one of the factors which made for their sale, because it tended to encourage salesmanship. He thought if the sales of patent medicines were ever to be reduced to any great extent, or checked, it would be through the exercise of the pharmacist's sole personality—through salesmanship. They had had ample experience in the past of panic legislation. The Dangerous Drugs Act was one—an example which he hoped none of them wished to see repeated. That was panic legislation—(cries of dissent)—and it really arose through a newspaper stunt, which was worked up deliberately by certain organs as they were called, of public opinion. There, he thought, they saw a certain danger into which they might all be driven unless they moved with care and discretion on those lines.

Reference back to the Council was unanimously agreed to by the meeting.

Articles of Pupilage

Opening the discussion on the subject "Articles of Pupilage," the PRESIDENT said he would like to remind the delegates that in 1908 the Society obtained power to enforce curricula, whether in the shop, the institution, or the school. Up to then, the three years' certificate could be signed by almost anybody; it was very indefinite, and the Registrar had no power to investigate. They got that Act passed in 1908, but it was not until 1919 that they got by-laws passed which put part of it into operation. The delay between 1908 and 1919 was caused by the Insurance Act of 1911; then, of course, the great war in 1914, and the Pharmaceutical Society had bigger things to do. Last year, the Conference discussed in great detail the question of pupilage and the possibility of having one draft agreement, which, with slight modification, might apply to different parts of the country. All the suggestions which were made at that conference

meeting had been placed before the Council of the Society and had been well considered. The Council thought it would be almost impossible, say, to fix a rate of remuneration for a pupil, since the difference not merely between different parts of the country but between different parts of the same town was acute. The remuneration, therefore, was left to the individual pharmacist. He (the President) hoped they had read over that contract carefully. They had to go slowly in those matters, but if they got so far as a compulsory form of agreement, regulating and stating the contract between the pharmacist and his pupil, it would be a step in the right direction. It was as well for them really to understand that the pupilage must be served in a shop kept open for the retailing, dispensing and compounding of poisons in accordance with the provisions of the Pharmacy Act, 1868, and the Poisons and Pharmacy Act, 1908, or in the dispensary of a hospital or similar institution approved for the purpose of training pupils. No firm, though legally entitled to keep open a shop, could take in an apprentice unless they were legally entitled to use the title "chemist and druggist," unless they had a pharmacist on the directorate to instil some stability into the tuition or oversight of the pupil.

Mr. BEARDSLEY (East London) said they had fully discussed the question of the agreement form in the East Metropolitan district, where they were in the unique position of taking in more wholesale houses and hospitals than any other part of England. His committee felt that they must send up the following two recommendations to that meeting: (1) "That in the interests of the apprentice, we consider the Pharmaceutical Society, acting as the guardian of any apprentice entering the profession, should, as their duty, ascertain and acquaint themselves that any pharmacist who trains an apprentice should be a fit person to provide proper facilities for that purpose"; (2) "That the time has now arrived when certificates of apprenticeship might be received from wholesale drug houses, hospitals and institutions where the proper facilities are provided for the training of apprentices." They had no qualification that they could offer to the wholesale trade. Were people in the wholesale to be debarred? The result would be that in ten years' time there would not be a member of the Pharmaceutical Society in the wholesale trade. ("No, no.") He contended that some arrangement should be come to.

Mr. SHEPPERD (Barnstaple) said he did not gather in the draft memorandum that the following was covered: "The employer to be shall furnish to the intending pupil and his guardian a copy of the legal requirements demanded by the agreement a reasonable time before the agreement is completed."

Mr. McMILLAN (Glasgow) criticised the draft agreement. In the first place, it was of inordinate length, and he was perfectly certain that in Scotland they would never get people to use the agreement unless they shortened it by one half. A lawyer-friend informed him that it was a very choice example of legal verbiage and tortuosity—(laughter)—and he heartily agreed with him, although he was quite in sympathy with the object of the draft agreement. So far as he was concerned—he was speaking for the West of Scotland—he felt it was no use sending a thing like that to them. He would suggest that it be sent first of all to the North British Executive, for the Executive's solicitor to draw out a suitable form. He was quite sure that if a lawyer thought it was incomprehensible that the simple, unsophisticated pharmacist would be in a worse plight. He also felt that they would never get the average parent and the average pupil to sign it: they would simply be frightened by it.

Mr. BROWNE (London) said he was quite sure that when the Society took Latin out of the syllabus it was one of the greatest mistakes they had made for a long time. They wanted Latin added to the Preliminary examination.

The PRESIDENT: I am afraid we cannot discuss the question of examinations. I think you are out of order.

Mr. QUANT (Torquay) said he was rather struck in reading through the draft articles for the first time that the

word pharmacy or pharmacist did not appear in them at all.

The SECRETARY pointed out that that was because the employer might not always be a pharmacist.

Mr. HIGGS (Kingston-on-Thames) called attention to the clause in the draft agreement, which reads: "That the said pupil shall faithfully and diligently attend all such classes of instruction as may from time to time be provided, controlled, or approved of." The approved institutions, according to the Pharmaceutical Society's letter, numbered 119, and out of that number 28.5 per cent. did not teach botany. He had heard it repeatedly said among pharmacists that that part of the examination should be passed during a youth's pupilage. How was it possible for him, during his pupilage, in which he was confined to a certain town or district, to attend the number of hours for botany as prescribed in the curriculum? At the important town of Kingston-on-Thames—(laughter)—he interviewed the secretary as to why they omitted botany from their syllabus. The answer was "It is an old lady's subject, and not now taught." He wanted to suggest to the Council of the Pharmaceutical Society to see its way that where a lad wanted to present himself for Part I, and was resident in a town some distance away from botany classes, the certificate of his master that he had studied for so many hours in the subject should be accepted.

The PRESIDENT said when the Council found that in an important area like Kingston-on-Thames—(laughter)—there were no botany classes, they wrote to the branch of the important area, and the result invariably was that there were botany classes started very quickly.

Mr. APPLETON (Sheffield) said he would like to know how it was that the framers of the draft articles of agreement specifically mentioned the word dispensing chemist. Why should they have any adjectival qualification to a title to which they were solely entitled by Act of Parliament?

In reply, the PRESIDENT said for the moment it would be perfectly right if Mr. Appleton said that the registered person, bodies corporate, and so on, were the only people entitled to use the title chemist in connection with an open shop.

Mr. HAY (Bolton) said he was in sympathy with their friend from the South-West of Scotland. They in Bolton thought that the articles were much too cumbersome for the average person.

Mr. PECK (Cambridge) said he thought they must agree that the draft agreement went no further than they agreed upon at the last Conference. He had a certain amount of sympathy with Mr. McMillan when he stated that the agreement was longer than it need be, but he thought it was far easier to delete than to add afterwards. He thought that could be left with the lawyers both North and South of the Tweed to bring into effect. The reasons why he thought they should adopt the draft agreement were: (1) It corroborated the certificate which the candidate had to send to the registrar in entering for the Qualifying examination; and (2) It would be a great thing for girls and boys who were drifting into pharmacy to be pulled right up against that agreement. It would be good for the girl and the boy, for the master, and for pharmacy generally. It would also bring the future candidate entering into pharmacy at once into close touch with the Pharmaceutical Society. He emphasised that they had a duty which they owed to the apprentices and entrants into pharmacy. He maintained that the new entrants into pharmacy were distinctly of a higher type than some of those who presented themselves some years ago. The boys and girls from the secondary schools who considered themselves not quite competent, or who had not got the time or the money to go into purely professional chemistry, were now turning their attention to pharmacy. Mr. Beardsley had complained that if that agreement went through as it was he would be unable to train apprentices to pharmacy. An apprentice who put himself to a wholesaler, he maintained, had far better take the degree in pharmacy. It would be possibly quite as simple for him, and more useful to him in his after-work. He hoped the meeting would carry in some form or other that draft agreement.

The PRESIDENT said he hoped that the meeting would not carry anything in the way of a resolution. What they wanted, before that draft agreement became the agreement, was all their ideas, so that the Council could go into them. For instance, the idea of simplification suggested by Mr. McMillan, and the ideas that had been suggested on all hands, would be considered by the Council before that draft agreement was communicated further to anyone.

Mr. H. HUMPHREYS JONES (Liverpool) said he was very glad that they had got so far. He thought if that indenture had been in force all along the position of pharmacy to-day would have been very much better, and he agreed with the other speakers who mentioned that it had its moral worth, both from the point of view of the apprentice and of the master. The various obligations of the apprentice took practically seven-eighths of the whole thing. That was all well and good, but he did not think it was necessary. But they said very little about the obligation and the duties of the employer. He would like something specific to be mentioned under that particular heading to bring home to the pharmacist that he had his duty towards his apprentice, and that it was not a one-sided affair.

Mr. DUFF (Glasgow) also thought there was far too little on the master's side in the agreement. There should be a little more laid down as to teaching the student. Another thing he would like to see put forward was that every apprentice should be a student-associate of the Society, and, further, that the Council of the Society see to it that the student be taken in on a small fee.

Mr. MARSH (Leicester) said his branch were in entire agreement with the draft apprenticeship scheme which had been put before the meeting, and they rather wished, without being egoistical, to congratulate the Society that they had got as far as that. He wished to stress the recommendation which had been put forward that the Society should do something through its branches to look after the interests of the apprentice. There were certain pharmacies which they all realised were not fit and suitable for an apprentice to belong. They knew it was extremely difficult, and that they were treading on dangerous ground. It could be done in various ways.

Mr. PHILLIPS (Haverfordwest) said he did not like the paragraph in the draft memorandum which stated that additional covenants might be provided to suit the circumstances of any particular case. What he was afraid was that that would become the general case and not the particular case. He would like to see that eliminated altogether, and no difference be made at all in any case.

Mr. EDWARDS (Manchester) said that, at a meeting held by the Manchester Association some time ago, it was felt that that scheme divided itself into two parts—the remuneration of the apprentice, and also the length of time which the apprentice had to serve. It was felt that the question of remuneration was a case of give and take, and left with the judgment of the apprentice and the master. For that reason no definite decision was arrived at. On the other hand, it was discussed and finally decided that a suggestion should be made to that Conference that in the case of an apprentice who had passed Part I of the examination prior to entering on his apprenticeship that the term should not be more than three years; if the apprentice had not passed Part I, the term of apprenticeship should be four years in consideration of the fact that the master should grant certain facilities for study.

The PRESIDENT said he thought they had had a very good discussion. He rather thought it was the intention of the Council that the point which had been raised by the last speaker should be rather a matter of detail that would be incorporated in the agreement, and would be dependent on the varying circumstances as to whether the candidate had got through Part I or not. With regard to the point which had been raised by other speakers as to the suitability of some pharmacies for the taking of apprentices at all, he held to-day, and he had always held, that logically they directed the scheme of education when they said that an apprentice must attend an approved institution, must pass approved examinations, and must attend approved schools, but they said nothing

about the nature of the shop. The real difficulties there were difficulties in detail of administration. He thought the Council as a whole were in favour of the principle, but if it could possibly be done the Society should insist that where apprentices were taken facilities for such apprentices should exist. Just for the moment the administrative difficulties were very great. If they could get so far, they would have gone one step forward. He was very much obliged to them for the way in which they had carried on the discussion. The Council would take everything into consideration before passing it finally.

Pharmaceutical Service in the Army

The interest of members of the Conference in pharmaceutical service in the Army was not excessive, judging by the moderate attendance at the delegates' meeting on Wednesday morning. Allowance must, in fairness, be made for the counter-attractions of the ladies' excursion, which only the strongest-minded could resist. Mr. F. P. Sargeant, President of the Pharmaceutical Society and of the Conference, took the chair just after 10 o'clock, and the other occupants of the platform were Mr. E. Saville Peck, Mr. Philip F. Rowsell (Vice-President of the Pharmaceutical Society), Mr. Edmund White (chairman of the Conference), and Sir William Glyn-Jones.

The PRESIDENT, in opening the proceedings, remarked that it was certain, not only in regard to the Army, but in other matters also, that, if there was a pharmacist working unwillingly, such a state of things was bad for the body politic. The Conference would very much value, in the discussion, expressions of opinion from men who had had actual experience in the Army.

Mr. E. SAVILLE PECK opened a discussion on "Pharmaceutical Service in the Army." Mr. Peck said the title had been chosen advisedly, in contradistinction to the phrase, "The employment of pharmacists in the Army," which was something quite different and merely denoted subservience and not a more definite entity in itself within the Medical Service, which, they claimed, the Pharmaceutical Service in the Army should be. Let them look at the history of this movement. It was a quarter of a century ago since the Council of the Society addressed a remonstrance to the War Office upon the unsatisfactory position of the pharmacists who had volunteered as compounders in the South African war. The authorities, without attempting to refute the statements made, promised to look into the matter, but actually took no steps to remedy the injustices then meted out to the qualified man. In November, 1906, Surgeon-General Evatt read his paper to the Society, and pressed for the organisation of a war reserve of fifty pharmaceutical officers. In 1909-10 there were visits by the Army authorities to the examinations of candidates for the Society's qualification, and return visitors to their examinations for Army compounders. He believed he was right in saying that it was tacitly agreed that the Society's examinations were on an entirely different and a higher plane than theirs.

IN 1914

In 1914, on the outbreak of war, he personally went to the War Office and called upon an officer of high authority, and placed his views before him as to the necessity and advantages to be gained by including a service of pharmacists to assist in the work of distribution and dispensing of drugs. He was told his arguments were sound, but that there was a war on and it was impossible to alter the existing arrangements. He gave it up as a bad job, and accepted a commission in his own unit. Coming down to 1915, his experience in connection with the hospital more and more confirmed him in the opinion that there was no real pharmaceutical organisation or *personnel* ready to cope with the work done in a general hospital, and in July of that year, as their President, he ventured to put before the Society a scheme for an Army Pharmaceutical Service within the Medical Service for the provision of trained men to supervise the supply and distribution of drugs. If such a corps had been formed in 1915, there would have been

an untold saving in material and man power during the war. (Hear, hear.) However, nothing was done in that direction. In 1917, after three years of war and hopeless inefficiency in pharmaceutical matter, a special committee of the Council was appointed to lay before the authorities at the War Office matters connected with the recognition and utilisation of pharmacists in the Army. He thought perhaps it would have been better if they had drawn attention, as they did later, more to the inefficiency of the general pharmaceutical services. At that time the Society were receiving hundreds of letters from men who were in the Army telling them of the inefficiency. Permission was given for their secretary, Sir William Glyn-Jones, to visit the Armies in the field and to make investigations on the spot. His report was sent to the War Office. It provided evidence as complete and damning as one could possibly need to show the grave defects in the pharmaceutical service at the time. It showed the wanton waste and extravagance of material in one place, and the scarcity in others. It illustrated the utter incompetency of the authorities to appreciate the value of the *personnel* available to deal with the problem, and the gross mismanagement of the distribution of pharmacists and material. The speaker dealt with a number of points in Appendix D of the report of March, 1918 (*C. & D.*, May 17, 1924), and read extracts from paragraphs 1, 4, 5, 7, 11, 12, 15, 17, 18, 19 and 22.

THE DELAY IN PRINTING

Sir William Glyn-Jones had suggested certain reforms, especially that of the provision of officers of commissioned rank. This report, agreed by the committee of 1921, should have been included in the general report of that committee, but it was not printed in that report, and their representatives on the committee insisted that permission should be given for its inclusion in the printed copy. Why could they not print it in the first instance? He maintained it was evident that they thought it advisable to suppress it. (Hear, hear.) This report must be the basis of the evidence they must bring before their members of Parliament and the public. He earnestly impressed upon them to read it, because it would give them unbounded confidence in justice of their claim. This report was sent in, and a special committee brought out a report (Appendix F) which dealt with commissioned rank. The committee thought that "honorary commissioned rank should be open to the non-commissioned officers of the Pharmacists' Section." They now had reports F and D. What was the result? One little Army Council instruction that in all hospitals of 100 beds and over a superintending pharmacist would be placed. No mention was made of any men of commissioned rank. The Society's representatives were asked to produce a scheme: they did so in June, 1919. This was never considered by the Joint Standing Committee: it was simply turned down. It was his firm belief that, until they had such a scheme, there would be no real improvement.

THE R.A.M.C. COMMITTEE OF 1920

In 1920, while these negotiations were going on, a committee within the R.A.M.C. had been set up without any reference to the Society, which had been doing all it could to assist the authorities. Was that the treatment a Government department should mete out to a society, of which the President the previous evening spoke in such eloquent terms? What did these officers of the R.A.M.C. find? It was rather pathetic and distinctly humorous. They found that "the standard of efficiency under the present system of training is inadequate." After four or five years of this inefficiency, they had instituted a school of pharmacy, giving the chief instructor commissioned rank. Much had been said about commissioned rank. He was not so interested in the pay and status as in the authority which it would give in the pharmaceutical section. They wrote saying the Army Council could not appreciate the seriousness of the position, and expressing their intention to place the full facts if necessary before Parliament and the public. He thought it was not too much to say that this shook them up; and as a result the Army Council set up a Joint Committee in 1920.

But after two or three meetings it was perfectly clear that the representatives of the R.A.M.C. did not appreciate even then the lamentable facts of the pharmaceutical services and the many injustices meted out to pharmacists. He wrote to Sir William Glyn-Jones suggesting withdrawal from the committee unless there was a change of attitude. They hammered out the report of the committee of 1921, which went some way towards the betterment of the pharmaceutical services. The speaker drew attention to paragraphs 8, 9, 14, 16, 20, 21, 25, 26 and 27 of the report. It would be seen how they suggested it should be carried out, and they pledged themselves as members of the Council of the Pharmaceutical Society to do their utmost to put this matter through and create a reserve that would take action immediately on the outbreak of war.

AT A STANDSTILL

Did the delegates realise that at the present time, if this country had to go to war, the conditions were exactly similar to what they were when the South African war broke out, so far as the pharmaceutical services were concerned and the treatment of pharmacists? This report went to the Army Council early in 1922. Intimation was received that the Council reluctantly decided to postpone a detailed examination of the report for a whole year. In February, 1923, they were again approached, and they replied they were unable to adopt the recommendations of the committee. They offered, in response to an urgent request that the report should be published, to have it laid before Parliament later in deference to the wishes of the representatives of the Society if Parliament expressed a desire for its publication. (Laughter.) A communication was sent to the branches—and it was there they came in—asking them to approach Parliamentary candidates, with the result that they succeeded in getting 283 members returned who consented to express their desire for the publication of the report. This was the record of the Council in the matter. It was a clean record. (Applause.) They had endeavoured to convince the authorities of the urgent need of drastic reform. They held their hand while the war was on, and withheld information even to their own members till permission was given. They had played the game as loyal British gentlemen. He left it to the meeting to decide whether they considered the War Office had played the game also when they considered the injustices meted out and the utter confusion in the pharmaceutical service. Now their lips were unsealed, and they could tell the public what had happened. What should be their next move? The Army authorities they had seen were either unconvinced of the necessity of a drastic alteration, or unwilling to agree to the proposed change, although they themselves were unanimous on the report—or, again, incompetent or powerless to get it put into operation. It remained for pharmacists to educate public opinion, and to convince their representatives in Parliament of the necessity of an inquiry into these matters. They must leave no stone unturned until officers and men of the British Army received at least as good a pharmaceutical service as they could in civil life. He moved the following resolution:—

That this meeting emphatically approves of the resolution of the Council condemning the inaction of the Army authorities in connection with the urgent necessity for reforms in the Army pharmaceutical services, and pledges itself to secure through the branches the fullest support for the campaign foreshadowed in the resolution.

Mr. WHITE seconded the resolution. It was not necessary, he said, to spend any words to convince anyone present of its necessity from their own point of view. Pharmaceutical service in the Army could not be of the same nature as the service in their own pharmacies. Some might have said that the Council representatives ought to have asked for more. The correct attitude to adopt was one of the strictest moderation—that the pharmaceutical service, when there is one, should be controlled by pharmacists of suitable rank. It was difficult to organise a service in a hospital, and such organisation in the Army was more difficult still. Pharmacists must influence public opinion.

Mr. F. G. HINES, referring to the meetings with the War Office authorities, expressed his profound disappointment that the Council should be able to put forward such meagre results. He viewed with utmost disquietude the prospect of the Army Medical Corps setting up a school of pharmacy. This, he considered, was one of the main points to bear in mind. He stressed the need for the only authority concerned with training for the pharmaceutical qualification being the Pharmaceutical Society. The Council was trying to take the long view. He hoped that, individually and collectively, the members would do their share in backing up the Council. Mr. CHAPMAN (Chertsey) corroborated a good deal of what had been said. Major Peck, he said, had only given a plain statement of facts. He had overstated nothing. The speaker quoted the case of a doctor's chauffeur, dispensing poisons, while qualified men washed the floors. Asylum attendants, clerks and teachers acted as pharmacists. One qualified man was picking up paper with a nail in the end of a stick for twelve weeks. (Laughter.)

Mr. WOKES (Liverpool) also spoke from experience as to maladministration in Army dispensing. The fact that the science of medicine is founded on chemistry appeared to be ignored. Reform was held by ignorant autocrats at the head of affairs.

Mr. LONGDIN (Scarborough) gave his personal experiences when joining the Army. He was told that the R.A.M.C. did not require pharmacists, but was subsequently transferred from the infantry to the R.A.M.C., and was then chiefly employed in driving a 3-ton lorry.

Mr. E. C. BENNISON (Birmingham), speaking from experience of thirteen years' commissioned service in the Army, said that he was pleased to hear Mr. White speak of moderation. Pharmacists had failed in the past by asking too much. During the late war many physicians and surgeons served throughout with the rank of captain. If pharmacists were given higher rank, medical men would be subordinate to them, and the medical profession would not tolerate that. The three points of view were those of pharmacists, the War Office, and the taxpayer. There was jealousy among non-commissioned officers concerning the admission of pharmacists. It was said that the existing compounders are trained as ward orderlies, in nursing, in first-aid, in a knowledge of surgical instruments, and in accounting for medical stores. He (the speaker) suggested that warrant rank would be more in keeping with a pharmacist's status in civilian life.

Mr. MALLEY (Blackpool), after relating his personal experiences, referred to the jealousy of N.C.O.'s of qualified dispensers, which he attributed in many cases to the slender means by which they held their rank, and consequently considered it wise to keep the qualified man under.

Mr. MITCHELL (Inverness) spoke of his three years' experience in the South African War, and considered that until pharmaceutical service in the Army is put on a proper base, no real pharmacy will be seen in the Navy or Army.

Mr. TWIGG (Hull) suggested that it would be advisable to find out from which quarter the opposition comes from.

The PRESIDENT commented upon the seriousness of the resolution, and asked Sir William Glyn-Jones to outline the kind of appeal that should be made by individual pharmacists to members of Parliament.

Sir WILLIAM GLYN-JONES gave, in concise and trenchant phrases, a model of the statement that might be addressed to members of Parliament all over the kingdom by pharmacists in their respective constituencies, emphasis being laid on such portions of the official report as Appendix D.

The resolution was then put from the chair, and was carried unanimously.

Mr. A. R. KEITH (London) moved a vote of thanks to the speakers. The meeting was much indebted to the ex-Service men who had spoken. (Applause.)

Mr. A. H. JENKIN (London) seconded the vote, which was accorded by acclamation.

Science Section—Tuesday Afternoon

A gathering of rather more than average size resisted the charms of the city and the attractions of the delegates' conference on Tuesday afternoon. The first paper presented (read by Mr. F. H. Carr) was:—

The Preservation of Anæsthetic Ether

By G. MIDDLETON, B.Sc., A.I.C.

[ABSTRACT]

It has long been known that ethyl ether, after exposure to light and air, has a strong oxidising action, and that the impurity to which this is due is the cause of undesirable after-effects when the ether is used for the production of anæsthesia. The exact nature of this substance has been disputed. In the most recent experiments of Clover ("J. Am. Chem. Soc.," 1922, 1, 107) an unstable organic peroxide was isolated from impure ether. Clover considers this substance to be ethoxyethyl hydrogen peroxide, $C_2H_5O.CH(CH_3)O.OH$, while Wieland and Winger ("J. C. S. Abstracts," 1923, i, 650) state that it is dihydroxy-ethyl peroxide, $CH_3.CHOH.O.O.CHOH.CH_3$. It was thought desirable to see whether greater stability of ethyl ether could be secured by special purification or by the addition of an anti-catalyst. The conflicting results obtained by different observers may be due to the fact that many different methods of testing have been used.

For the purpose of investigating the initial rate of production of peroxide, it was first necessary to find a sufficiently delicate and accurate test for the presence of peroxide. To be satisfactory, such a test should be capable of quantitative interpretation. A helpful account of tests which have been proposed is given by Baskerville and Hamer ("J. Ind. Eng. Chem.," 1911, 3, 301). In order to find which was the most suitable test for the present purpose, they were compared by applying each in turn to three different samples of ether—(a) commercial methylated ether (0.720), freshly distilled over sodium, and assumed free from peroxides; (b) ordinary commercial methylated ether; and (c) a sample of commercial methylated ether, which had been standing in contact with air in a light place (daylight, with some direct sunlight) for ten weeks. The tests were applied according to the details given by Baskerville and Hamer. The results are given in the following table (— indicates a negative result, + a decided positive reaction):—

Test reagent	Sample A	Sample B	Sample C
Ferrous thiocyanate	—	+	+ very strong
Potassium iodide	—	—	+
Potassium iodide and starch	—	—	+
Potassium iodide and phenolphthalein	—	—	+
Vanadic acid	—	—	+
Chromic acid	—	—	very faint
Benzidine	—	—	+
Ferricyanide	—	—	+
Cobalt nitrate	—	—	+
Uranium nitrate	—	—	—
Cadmium iodide	—	—	+
Cadmium iodide and starch	—	—	+
Ferrous hydroxide	—	—	+
Titanic acid	—	—	+

These results showed that the ferrous thiocyanate test is the most delicate, and since it was found possible to adapt it to rough quantitative work, it was adopted for this investigation. By reasonably careful working, many possible sources of error may be eliminated. In the experience of the author, the most important source of error arises from the fact that the reagent oxidises moderately rapidly on exposure to air; but by following the routine given below, quite consistent results are obtained. Ether giving a negative result with this test can be prepared by fractionating commercial methylated ether through a bead column.

Preparation of Reagent.—30 c.c. of 10 per cent. sulphuric acid and 100 c.c. of water are boiled for a few

minutes in a flask through which is passed a current of carbon dioxide. Five grams of pure crystallised ferrous sulphate is added and allowed to dissolve. After cooling to about 40° C., 30 c.c. of 10 per cent. potassium thiocyanate is added. Titanous chloride solution (N/0.03) is then added drop by drop until the brown colour has just disappeared.

Details of Test.—Small stoppered bottles of about 35 c.c. capacity are used and 5 c.c. of the freshly-prepared reagent is quickly transferred to the bottle, which is then filled to the neck with the ether to be tested. It is allowed to stand with occasional shaking for five minutes in the dark, and the colour of the contents noticed. If any appreciable colour has developed, the amount of peroxide is determined with sufficient accuracy by titration with N/0.03 titanous chloride solution. During the titration a fair amount of shaking is necessary in order to obtain satisfactory results. The results recorded in this paper are direct readings—i.e., are c.c. of N/0.03 titanous chloride used by 30 c.c. of the sample of ether. The aims of the present investigation are:—

- (1) To find a satisfactory method of obtaining ether free from peroxide;
- (2) To investigate the rate of formation of peroxide in purified ether;
- (3) To examine the effect of different conditions of storage;
- (4) To discover, if possible, a substance which can be added to ether which will make it remain free from peroxide for an indefinite period.

Purification.—A number of substances, including sodium metal, sodium thiosulphate and ferrous hydroxide, have been recommended for the removal of peroxides; it has been found, however, that fractional distillation suffices to achieve this end. Commercial ether containing peroxides was distilled through a bead fractionating column 19 in. in length, the first, second and third fractions of 30 per cent. of the bulk being collected separately. It was found that both the first and the third fractions gave a faint colour in the test, while the middle one gave no coloration. The residue in the distilling flask gave a very strong reaction. In view of this result, the purification obtained in the following experiments may be due in part simply to the distillation. It was thought specially desirable to remove all traces of aldehyde and of peroxide; consequently, several of the methods of purification to be described are directed to this end. The purified samples of ether were kept in white glass, stoppered bottles about two-thirds full, and were tested at intervals in order to determine whether the method of purification had any influence on the subsequent production of peroxide. Samples were also kept under different conditions to determine the effect of light, air, etc., and to others were added small quantities of substances which might be expected to act as anti-catalysts of the reaction. Peroxide formation was not followed up after the initial stage, and when a sample had attained a titration figure of about 0.5 c.c. of titanous chloride solution, the experiment was, in general, abandoned.

[The results obtained are summarised in four tables.]

Table I shows that the keeping power of ether does depend to some extent on the method of purification; but in no case was an ether obtained that would keep for a week in daylight without the production of a considerable amount of peroxide. It is probable that the most important consideration in this respect is the removal of aldehyde, as Clover has shown that acetaldehyde approximately doubles the rate of formation of peroxide. Further, the peroxide, once formed, decomposes with production of acetaldehyde, which then catalyses the reaction of peroxide formation. These experiments were not all carried out simultaneously, and it is to be noted as regards the accuracy of the results that the intensity of the light may have varied to some extent. It is to be expected that traces of acetaldehyde are most likely to be present in the first fraction after distillation, but the results obtained do not show any

very decided superiority of any particular fraction in keeping power.

Table II indicates that the most important of the physical factors governing the reaction is that of light, although it may proceed even in complete darkness. In the latter case, however, the addition of oxygen occurs very much more slowly than in daylight. As a substitute for complete darkness, amber glass is quite effective, and a suitably purified ether kept in an amber bottle in daylight showed no sign of peroxide after eleven weeks. The amount of air in the bottle does not appear to be of much importance, as little difference was observed in the amount of peroxide formed in two bottles, one half full, and one completely full, of the same ether. Ether distilled in a current of carbon dioxide in order to remove any dissolved air, and kept in a completely filled stoppered bottle, showed as much formation of peroxide as that distilled in air; but it was noticed that a little ether was lost and air admitted into the bottle by leakage through the stopper.

Table III shows the influence of substances added to the ether. These may be divided into two classes—those added in bulk to form a separate phase at the bottom of the bottle, and those added in very small quantities in solution in the ether to act as anti-catalysts. The first class are mostly metallic in nature, intended to reduce peroxide as it is formed. Of these Zn-Cu couple and Al amalgam appear to be the most effective. Metallic sodium becomes covered with an insoluble coating, which probably explains its comparatively low efficiency. Solid caustic soda appears to be more effective than the reducing metals. In this case a yellow deposit is formed on the soda, and, rather curiously, the amount of peroxide appears to decrease after reaching a maximum. Of the second class, most of the substances used showed appreciable action, most noticeable in the case of aromatic compounds, and especially of phenols, and marked in the cases of benzidine, resorcin, pyrogallol, and the acetates of the last two. The use of benzidine was first suggested for this purpose by Professor Storm van Leeuwen ("B. M. J.," 1924, 471), but it was found that, although an efficient preservative, it had to be ruled out on account of the fact that ether containing only 0.01 per cent. of it develops a yellow colour after a few weeks' exposure to daylight.

Table IV deals with a comparison of pyrogallol with resorcin, and shows that pyrogallol is a better anti-catalyst than resorcin. The best results were obtained with those ethers which may be assumed to be free from acetaldehyde. They show that a suitably purified ether containing 0.01 per cent. of pyrogallol will keep as well in bright daylight as an untreated ether kept in complete darkness. In ether to which 0.01 per cent. of pyrogallol has been added, the rate of production of peroxide is reduced by about eighty times—i.e., from 0.9 in two weeks (best untreated ether) to 0.05 in nine weeks (best treated ether). A higher concentration of pyrogallol, 0.1 per cent., appears to be less effective than 0.01 per cent., and in this case a slight dark sediment was formed in the ether on standing. In some cases with the lower concentration a slight staining of the bottle was observed, but only where there was a fair amount of peroxide formation.

SUMMARY OF RESULTS

- (1) A delicate test is described for the detection of peroxides in ethyl ether, by which quantitative results may be obtained.
- (2) The influence of the method of purification on the rate of formation of peroxide has been investigated.
- (3) With regard to method of storage, the most important condition is the exclusion of light. Amber glass bottles are shown to be suitable for this purpose. The presence of air in the bottle appears to have little effect.
- (4) Many substances will retard the formation of peroxide, and their effect has been compared. Of these, pyrogallol at a concentration of 0.01 per cent. is the most powerful.

The above investigation has been carried out in the laboratories of The British Drug Houses, Ltd., to the directors of which the author is indebted for permission to publish these results.

DISCUSSION

The CHAIRMAN opened the discussion by suggesting that anaesthetists are the most unscientific people to deal with. He remembered one case in which one of them had suggested that a certain sample of chloroform was watered. (Laughter.) In another instance it was suggested that the patient would be less frightened if the mask was put on before the chloroform was used; accordingly it was fixed five minutes before the chloroform was introduced, and got so full of condensed perspiration that the patient received no chloroform. In recent years there had been a greater demand for pure ether. Anaesthetics, of course, could not be given in the dark. He (the chairman) was inclined to think that the importance of traces of peroxide was exaggerated. He trusted that the paper would get rid of fantastic notions.

Mr. GERRARD gave a parallel instance from his experience on the introduction of iodoform into dressings. Iodoform, dissolved in commercial ether and allowed to stand, gave free iodine; and the mixture, exposed on gauze, would turn blue or brown. Shaking with caustic soda or potash, or adding a trace of ammonia, was a remedy. Small traces of an essential oil would also often prevent the liberation of iodine.

Mr. C. A. HILL trusted that the idea that pure ether does not produce anaesthesia would, as a result of this paper, become a ghost effectively laid. Twenty years ago he (the speaker) had made a pure ether and redistilled it within six hours of an operation, and no nausea had been experienced by the patient. It was the decomposition products that produced bad after-effects.

Mr. LLOYD HOWARD desired to reiterate the importance of the very strong action of light, even diffused light, on ether. Amber glass was expensive for trade use, and a practicable substitute was pale-green winchester quarts wrapped in thick blue-black paper.

Mr. DORT, after complimenting the author, suggested that the most important impurity in ether is aldehyde, just as the most important impurity in chloroform is carbonyl chloride. Ether, if very old, is not safe for prolonged anaesthesia.

Mr. J. A. JONES pointed out that in the United States search had been made for the wave-length of light that would produce peroxide, and investigators had then set about counteracting it. A large bulk of the ether of commerce did not answer the B.P. and Codex tests; but it was received with favour by hospitals, and it was a pity it was refused recognition. There seemed to be a tendency to-day to set up standards; trade requirements, however, should come first.

Mr. FOURACRE remarked that it was very difficult to get true clinical evidence. He had tried shaking a proprietary ether with mercury, on alternate days, for a fortnight, and had received a good report of it; but the anaesthetist was not sufficiently interested to go on with it.

Mr. LESCHER pointed out that the length of storage was not given prominence in the author's paper, and that seemed an important point.

The CHAIRMAN, before calling on Mr. Carr to reply, repeated that the chief difficulty was the anaesthetist. We should, of course, start with pure ether and keep it pure.

Replying on behalf of the author, Mr. CARR said that alkali was effective, but it was not desirable from the anaesthetist's point of view that it should be present. Mercury was a fairly useful inhibitor. There was not enough evidence at hand, he thought, to say whether aldehyde or peroxide was the nausea-producing substance. We seemer never to get one without the other. The author's investigations had extended over five or six months, and had resulted in a more delicate test than had been known before.

The next paper (also read by Mr. Carr) was :—

The Examination of Carbon Tetrachloride for Medicinal Purposes

By MAURICE PERKINS, A.I.C.

[ABSTRACT]

CARBON tetrachloride is extensively used in the treatment of hookworm and other diseases caused by intestinal parasites. As the dose is a large one (50-80 minims) and the impurities likely to be present are exceedingly toxic, it is of the utmost importance that medicinal carbon tetrachloride should possess a high standard of purity. Carbon tetrachloride is not included in the British Pharmacopœia, but it is in the British Pharmaceutical Codex, and the xanthate method of determining carbon disulphide in carbon tetrachloride is there described. The permissible limit of carbon disulphide given is 0.1 per cent.—i.e., 1,000 parts per million—which appears to be an unnecessarily high figure. For the purposes of the present investigation all the published methods for the detection and estimation of carbon disulphide were examined. They may be classified as follows :—

Class I.—The formation of potassium xanthate by the action of alcoholic potash, and its subsequent detection and estimation.

Class II.—The formation of hydrogen sulphide, and its subsequent detection or estimation.

Class III.—Various colour tests and micro-reactions. Methods belonging to each class are outlined below.

CLASS I

(a) The formation of a characteristic yellow precipitate of copper xanthate on addition of a copper salt to xanthic acid, the copper xanthate being determined either gravimetrically as copper oxide, or volumetrically after decomposition with bromine or nitric acid.

(b) Titration of the xanthic acid produced with standard copper solution.

(c) Oxidation of the xanthate to sulphate by means of alkaline hypobromite, or hydrogen peroxide, followed by precipitation as barium sulphate.

(d) Titration of the xanthic acid with standard iodine solution, whereby the xanthic acid is oxidised to ethyl di-thio-carbonate.

(e) The conversion of potassium xanthate into ethyl mercaptan, which may be detected by its characteristic odour.

CLASS II

(a) The reaction of carbon disulphide with anilin in the presence of alkali, resulting in the formation of diphenyl thio-urea and hydrogen sulphide. The latter is detected by means of sodium nitroprusside.

(b) The production of silver sulphide by the interaction of anilin, carbon disulphide and alcoholic silver nitrate.

(c) The precipitation of lead sulphide by warming with alcoholic ammonia and lead acetate.

(d) The formation of sulphide by passing the vapours containing carbon disulphide over heated copper oxide, or, after mixing with hydrogen, over platinised pumice.

(e) The formation of sulphide by boiling with aqueous potassium hydroxide and detecting the sulphide by means of a lead salt.

CLASS III

(a) The production of ammonium thiocyanate by heating with alcoholic ammonia, and its detection with ferric chloride.

(b) The formation of an orange precipitate or yellow colour with carbon disulphide and thallous acetyl acetate.

(c) The formation of di-thio-mercuric salts and subsequent micro-detection.

(d) Precipitation with phenylhydrazine.

(e) The reaction with tri-ethyl phosphine.

Of the above tests, II (b), II (d), III (a), III (b), III (d), and III (e) were found unsuitable or insufficiently delicate to be worth following up, but the limitations of I (a), I (e), II (a), II (c) and II (e) were determined.

I (a).—The method given in "Testing of Reagents" (E. Merck) for the copper xanthate test was found to be sufficiently delicate to detect a minimum of 350 parts per million of carbon disulphide.

I (e).—Melzer states that an alcoholic solution of potassium xanthate on boiling with a little ethyl iodide forms diethyl-thio-carbonate, and the subsequent heating of this with alcoholic ammonia produces ethyl thio-carbonate and ethyl mercaptan. The latter may be detected by its powerful odour. This test was applied for the detection of carbon disulphide in carbon tetrachloride, by shaking the latter with a small quantity of alcoholic potash, adding a few drops of ethyl iodide, boiling for half a minute, and adding two or three drops of alcoholic ammonia. In this way it was found possible to detect a minimum of 60 parts per million.

II (a).—By the method of C. Newcomb 1 c.c. of carbon tetrachloride is mixed with 2 c.c. of anilin and 2 drops of ammonia solution. After standing for five minutes, 1 or 2 c.c. of a freshly-made 1 per cent. solution of sodium nitroprusside is added. A purple colour indicates the presence of carbon disulphide. This test was found to give a faint reaction with 200 parts per million.

II (c).—On warming carbon tetrachloride with alcoholic ammonia, and subsequently adding a few drops of lead acetate solution, a black precipitate of lead sulphide was produced with amounts of carbon disulphide over 600 parts per million.

II (e).—On boiling carbon tetrachloride with aqueous potassium hydroxide and adding lead acetate solution, amounts of carbon disulphide above 300 parts per million were detected.

A summary of the above results shows the following tests to be applicable for detecting carbon disulphide in quantities greater than the limits shown :—

	Limit in parts per million
II(c). Alcoholic ammonia and lead acetate	600
I(a). Merck's copper xanthate test ..	350
II(e). Aqueous potassium hydroxide and a lead salt	300
II(a). Method of C. Newcomb ..	200
I(e). Melzer's mercaptan reaction ..	60

All these tests are suitable for determining the purity of carbon tetrachloride of the standard given in the British Pharmaceutical Codex—i.e., not more than 1,000 parts of carbon disulphide per million. With the exception of I (e) none is suitable for testing carbon tetrachloride which contains less than 200 parts of carbon disulphide per million. In the work described in this paper a modified form of one of the above tests (II (e)) has been devised, which gives a distinct reaction with as little as five parts of carbon disulphide per million. The principle of the modification is that, while the boiling of carbon tetrachloride with aqueous potassium hydroxide and addition of lead acetate is a moderately sensitive test, the use of concentrated aqueous alcoholic caustic potash containing potassium plumbite results in a much more sensitive test. The most suitable conditions were found to be as follows : An alkaline plumbite solution is made by dissolving 0.5 gram of lead acetate in 20 c.c. of water, and then adding 20 grams of pure caustic potash. To 10 c.c. of the carbon tetrachloride are added 3 c.c. of this solution and 1 c.c. of absolute alcohol. The mixture is then boiled, and agitated for a few minutes, and allowed to stand. A coloration, brown to bluish-black, according to the amount of carbon disulphide present, develops in the aqueous layer in a few minutes. An appreciable darkening is visible in the upper layer with as little as five parts per million. This test is suitable for indicating the absence of carbon disulphide in carbon tetrachloride, and may possibly be adapted for the colorimetric determination of small amounts.

QUANTITATIVE DETERMINATION OF CARBON DISULPHIDE

The method given in the British Pharmaceutical Codex was found to be quite satisfactory, provided standard conditions are followed. These conditions should be :—

(a) The use of N/100 instead of N/10 iodine.

(b) The carrying out of a blank test and making the necessary correction.

(c) The use of exactly 2 grams of sodium bicarbonate for the quantities given in the B.P.C. test.

Carried out thus, the method is suitable for estimating quantities less than 0.1 per cent. *W/V*.

The tests for impurities other than carbon disulphide were tried and the following adopted:—

Non-volatile Matter.—25 c.c. evaporated to dryness on a water-bath should leave no residue.

Chlorine.—20 c.c. shaken with 5 c.c. of a 5 per cent. cadmium iodide starch solution should show no blue coloration.

Chlorides and Acidity.—20 c.c. are shaken with 10 c.c. of water and separated; the aqueous layer should give no reaction with silver nitrate, or show any acidity to litmus.

Sulphur Chloride and Free Sulphur.—A negative test for carbon disulphide with potassium plumbite in dilute alcoholic solution also proves the absence of free sulphur or sulphur chloride, as both these substances give a coloration. Free sulphur is detected in extremely minute quantities by shaking the solution with a clean globule of mercury, its presence being indicated by the formation of a grey or black skin on the surface of the mercury. Also, sulphur monochloride is decomposed by mercury, forming free sulphur and mercuric chloride. This fact may be utilised for detecting sulphur chloride, as the sulphur formed produces a black skin on the mercury globule. Therefore a negative result in the test implies the absence of both sulphur and sulphur chloride.

Organic Impurities.—Either of the following tests are suitable:—

(a) Shake 20 c.c. frequently during one hour with 15 c.c. of concentrated sulphuric acid in a stoppered glass vessel, previously rinsed out with sulphuric acid. There should be no colour.

(b) 1 c.c. of carbon tetrachloride is shaken at intervals during one hour with 10 c.c. of a solution of *N/1000* potassium permanganate and *N/2* sulphuric acid. The permanganate should not be entirely decolorised. (*N.B.*—1 c.c. *N/2* sulphuric acid used.)

Aldehydes.—The Schiff's test has been found to be more sensitive than the one recommended by Merck. (10 c.c. of carbon tetrachloride and 10 c.c. of caustic potash solution of sp. gr. 1.3, are warmed for one minute and frequently shaken. The caustic potash solution should not become yellow or brown.) The test adopted was to shake 10 c.c. of carbon tetrachloride with 2 or 3 c.c. of Schiff's reagent. The formation of a pink colour indicated aldehyde.

COMPARISON OF VARIOUS SAMPLES OF CARBON TETRACHLORIDE

Samples of medicinal carbon tetrachloride from various sources were compared by the above tests. The results are tabulated below:—

No. 7 is a sample of "Tetraform," a British-made carbon tetrachloride specially purified for medicinal purposes.

Samples Nos. 1 to 5 inclusive were obtained from five different firms of British chemical manufacturers, while sample No. 6 was a Continental make.

These figures indicate great variation in the purity of medicinal carbon tetrachloride on the market, and

it is suggested that when used for internal administration it should comply with the following requirements:—

(1) Yield no reaction to the alkali plumbite test for sulphur compounds.

(2) Absence of acidity, chlorides and free chlorine.

(3) No appreciable residue on evaporation of 25 c.c.

(4) No reactions to the potassium permanganate test for organic matter and aldehydes.

The work entailed in the above investigations was carried out in the laboratories of The British Drug Houses, Ltd.

DISCUSSION

The CHAIRMAN pointed out that carbon bisulphide was given internally, in veterinary practice, in considerable doses. To say that adverse effects observed in the use of carbon tetrachloride were due to carbon bisulphide, which might be present in the proportion of 0.1 per cent. or less, was to attribute to the bisulphide a stronger toxic action than we knew it to possess. Impure carbon tetrachloride had been used with success. We should look for some other cause, and suspend judgment meanwhile.

Mr. MORSON said that some of the earlier work on hookworm was carried out in the East with carbon tetrachloride containing an appreciable amount of carbon bisulphide, and the treatment was successful.

Mr. BENNETT remarked that the paper was an important contribution to the chemistry and pharmacology of anthelmintics. Oil of chenopodium was now used largely, but had fallen into some disrepute because of its variability. Carbon tetrachloride became popular largely because of the economic factor. It should be as near absolute purity as possible.

Dr. CROSSLEY-HOLLAND thought that possibly the question of the purity of some chemicals had been rather overstressed. Impurities might lessen the after-effects; it had been suggested that a minute quantity of ethyl chloride improved chloroform. Might not carbon tetrachloride be modified advantageously with a small proportion of carbon bisulphide?

Mr. DOTT suggested that impurities might help when used as an insecticide was in question.

Replying, Mr. CARR contended that, if carbon bisulphide is an advantageous constituent of carbon tetrachloride, the percentage should be definitely standardised. Carbon bisulphide was a very toxic substance, and the B.P. standard was not a satisfactory one.

The next paper was:—

Tragacanth and its Mucilage

By NORMAN EVERS, B.Sc., F.I.C. and THOMAS MACHLAN, A.I.C.

[ABSTRACT]

THE work described in this paper originated in a suggestion by Miss Agnes Borrowman, a member of this Conference, that finely ground tragacanth does not give as strong a mucilage as more coarsely ground gum. Reference to the literature did not reveal any information on this point, nor were we able to obtain any evidence as to the effect of heat on the dry gum or on the mucilage. No simple method appears to have been suggested for comparing the strengths of mucilages obtained from different gums other than a rough comparison

No.	Acidity	Chloride	Free chlorine	Residue on evaporation	Sulphuric acid test	Schiff's test, aldehyde	Potass. permang. test., ald.	Merck's test, aldehyde	Plumbite test for CS ₂
1	Nil	Nil	Nil	Trace	Faint brown colour	Very faint	Nil	Nil	Positive
2	Nil	Nil	Nil	Nil	Distinct brown colour	Very faint	Nil	Nil	Positive
3	Nil	Nil	Nil	Trace	Nil	Nil	Nil	Nil	Positive
4	Nil	Nil	Nil	Nil	Nil	Very faint	Nil	Nil	Negative
5	Nil	Nil	Nil	—	—	—	—	—	Positive
6	Nil	Nil	Nil	—	—	—	—	—	Negative
7	Nil	Nil	Nil	Nil	Nil	NH	Nil	Nil	Negative

by the eye. The ordinary methods of determining viscosity have been suggested for comparison of mucilage strength, but we are not aware of any figures published for tragacanth. We therefore found it necessary to devise a method of quantitatively comparing the strengths of different mucilages before beginning this investigation, and in selecting a method for this purpose we endeavoured to avoid the use of special viscosity apparatus.

Falling Shot Method.—The method which was first used was based on the determination of the time taken for a steel ball of definite size to fall through a given distance in the mucilage. A mucilage is prepared according to the B.P. directions of 1.25 per cent. strength and poured into a 50 c.c. Nessler cylinder. The mucilage is allowed to stand for forty-eight hours with occasional stirring. Comparative results may be obtained after standing overnight, but a stronger and more homogeneous mucilage is obtained after forty-eight hours. A cardboard scale 5 inches in length is prepared with marks at distances of $1\frac{1}{2}$ and 4 inches from the top edge. This is placed against the cylinder so that the top edge is in a line with the surface of the mucilage and so that the falling of the ball between the two marks can be easily observed. Care should be taken to see that air bubbles are removed before the determination is made. A steel ball, $\frac{3}{8}$ in. in diameter, is then released on the surface of the mucilage with a small pair of forceps, and by means of a stop-watch the time which elapses between the lower edge of the ball touching the upper and lower marks on the scale is observed. The temperature should be between 15 and 20°C., but all comparisons of different gums should be made at the same temperature. A good gum should give a result of 150 seconds or more, using a powder which passed through a No. 30 sieve, but is retained by a No. 60 sieve.

Bismuth Carbonate Suspension Method.—A method which we have also used, which has the advantage of simplicity, is to prepare a suspension of a definite amount of a heavy bismuth carbonate in a mucilage prepared from the gum, and to judge the comparative suspending power by the height of the bismuth carbonate layer after a certain time. This method has the advantage of showing the relative values of gums under practical conditions of use. 100 c.c. of a mucilage is prepared according to the B.P. method, and mixed with a suspension of 8 gm. bismuth carbonate in 500 c.c. chloroform water. After thorough shaking a 6-oz. white glass flat bottle is filled with the suspension and allowed to stand overnight. From the comparative heights of the bismuth carbonate layers the quality of the gum is estimated.

Nitrogen Content in Relation to Jelly Strength.—Miss Borrowman put forward the suggestion that the value of tragacanth depended in some way on a protein structure, and that the nitrogen content would be found to vary with the jelly strength of the tragacanth. This matter was therefore put to the test. A number of samples of tragacanth were tested for jelly strength by the falling shot method and for nitrogen content, with the following results:—

Sample	Time of fall	Nitrogen	Sample	Time of fall	Nitrogen
	Seconds.	Per cent.		Seconds.	Per cent.
A ..	250	.035	F ..	30	.037
B ..	80	.041	G ..	14	.042
C ..	43	.052	H ..	12	.054
D ..	42	.086	I ..	10	.037
E ..	37	.050	J ..	10	.041

It will be seen from these results that the nitrogen content is small and apparently bears no relation to the jelly strength.

Ash in Relation to Jelly Strength.—In view of the high calcium content of the ash of tragacanth, and of the work of Haas on Irish moss and marine algæ ("Biochem. J.," 1921, 464), in which he showed the presence of ethereal calcium sulphates, the ash of tragacanth was tested for sulphate, but only a slight trace was found to be present. Also, after hydrolysis of the gum with nitric and hydrochloric acids, only a very slight re-

action for sulphate was obtained. The following table shows the jelly strength, by the falling shot method, and the percentage of ash in a series of gums:—

No.	Time of fall	Ash	No.	Time of fall	Ash
	Seconds.	Per cent.		Seconds.	Per cent.
1 ..	354	2.31	6 ..	66	2.61
2 ..	325	2.61	7 ..	16	2.41
3 ..	280	2.84	8 ..	15	2.70
4 ..	219	3.20	9 ..	13	2.53
5 ..	88	3.04			

Again no relation is to be observed between the two series of figures.

The Effect of Grinding.—Two samples of tragacanth were ground in a hand-mill and sifted, the powder being separated into three fractions as follows:—

No. 30-60 powders—that which passed a No. 30 and was retained by a No. 60 sieve.

No. 60-90 powder—that which passed a No. 60 and was retained by a No. 90 sieve.

No. 90 powder—that which passed a No. 90 sieve.

These powders were then tested by the falling shot method with the following results, the whole gum, merely broken into small pieces, also being tested for comparison:—

State of division			Time of fall (seconds)	
			Sample A	Sample B
Broken ..	..	..	288	230
No. 30-60 powder	..	..	220	69
No. 60-90 powder	..	..	190	44
No. 90 powder ..	..	..	104	27

Evidently a remarkable fall in viscosity has taken place as a result of grinding. Four commercial samples of tragacanth which had been unusually finely ground (to about 120 powder) were also examined by the same method and gave "times of fall" of 9, 10, 22 and 5 seconds respectively, that is to say, the mucilages produced were exceedingly poor, although the original gums had given mucilages of good jelly strength. These results can be accounted for either (1) by the mechanical breaking up of some structure in the gum by grinding, or (2) by the effect of the heat produced in grinding, which is usually considerable. In order to investigate this point, a sample of gum was ground by a slow succession of blows in a mortar, so that very little heat was produced beyond that of the actual fracture. Mucilages were prepared from the sifted fractions and had practically the same suspending power. The effect of grinding on the suspending power appears, then, to be due to the heat produced. This, of course, does not exclude the explanation of these results by the breaking up of some structure in the gum, which may be brought about by the heat produced.

The Effect of Heat on the Dry Gum.—A sample of broken tragacanth and also some of the No. 60-90 powder therefrom were heated for varying periods at 100° and 120°C., mucilages afterwards being prepared and tested by the falling shot method.

Gum	Heated to	Time of fall (seconds)
Broken ..	100° C. for 1 hour	340
" ..	100° C. for 3 hours	60
" ..	120° C. for 1 hour	40
" ..	120° C. for 3 hours	22
No. 60-90 powder ..	100° C. for 1 hour	96
" ..	100° C. for 3 hours	47
" ..	120° C. for 1 hour	40
" ..	120° C. for 3 hours	10

Similar experiments made with another sample of gum showed a corresponding effect on the suspending power.

Effect of Heat on the Mucilage.—We naturally expected the effect of heating the mucilage to be the same as that of heating the dry gum—namely, a progressive reduction in the suspending power. This, however, is not the case. Heating the mucilage for one hour in a

steam bath nearly always causes an increase, in some cases a remarkable increase, in its suspending power. After three hours, however, a big reduction takes place, and after four hours the suspending power is practically nil. It is usually found that about one hour's heating in a steam bath produces a mucilage of maximum suspending power. Preparation with boiling water is not sufficient for the purpose. Different gums, however, are somewhat variable in this respect. Heating the mucilage for one hour after previous dry heating of the gum also causes an increase of suspending power, but this is only slight if the dry heating has seriously damaged the gum. Probably the explanation of these results lies in the production of a uniform structure throughout the mucilage, which is more quickly attained by heating than by standing in the cold, but the further application of heat appears to cause hydrolysis of the gum, with consequent loss of suspending power. When powdered tragacanth is suspended in cold water each particle swells by absorption of water until in course of time a fairly uniform structure is attained, but, since the swelling is limited, it is probable that in the cold an absolutely uniform structure is not reached. The effect of heating the mucilage, however, is rapidly to break up the jelly particles with the production of a uniform structure. The same result may be obtained by passing the mucilage through a fine grinding machine. Tragacanth mucilage is usually recommended to be made with cold water, and a search of the literature has discovered very few instances in which the use of boiling water is directed. The B.P. recommends that the tragacanth should be "in powder" and that cold water should be used. The U.S.P., on the other hand, directs the use of a boiling mixture of glycerin and water and maceration for twenty-four hours, and does not require that the tragacanth should be powdered. We are not aware whether the last direction is based on experience of the different suspending powers of mucilages made from whole and powdered gums, or is intended to avoid the lumpiness which occurs when powdered tragacanth is used with boiling water. Although the use of boiling water undoubtedly gives a strong mucilage more quickly than cold water, a mucilage of maximum strength is only attained after heating for about an hour, as has been shown. The advantage of heating, therefore, is to attain optimum suspension rapidly. After standing a considerable time, there appears to be little difference in the suspending power of mucilages prepared with hot or cold water.

CONCLUSIONS

- (1) The strength of tragacanth mucilage does not vary with the nitrogen content or ash content of the gum.
- (2) Owing to its low sulphur content, tragacanth does not contain ethereal calcium sulphates in appreciable quantity.
- (3) Heating the dry gum to temperatures of 100° or 120° C. seriously impairs the suspending power.
- (4) The effect of fine grinding of the gum is seriously to diminish the strength of the mucilage on account of the heating of the gum.
- (5) Heating the mucilage gives a uniform product much more rapidly than in the cold, and a maximum suspending power is reached after about one hour in the steam oven, after which it diminishes.
- (6) For the routine testing of tragacanth the bismuth carbonate suspension method described is recommended, the gum being in No. 30-60 powder.

We have to thank Allen & Hanburys, Ltd., in whose laboratories this work was carried out, for permission to publish this paper.

DISCUSSION

The CHAIRMAN, in inviting discussion, remarked that the authors, by the virtue of patience, had succeeded in demonstrating facts that, to most of those present, must be entirely new.

Mr. GERRARD said that the paper would commend itself thoroughly to every good practising pharmacist. He himself had met with difficulties, years ago, in preparing emulsions. He soon found that powdered tragacanth had not the emulsifying power obtained by using

a solution of the gum itself. Powdered tragacanth, too, never gave as good a colour as the gum.

Mr. FOURACRE inquired whether any spirit was used, and if the absence of spirit would affect the mucilage from the point of view of the Sale of Food and Drugs Acts.

Mr. GRIER explained that his experience had been that glycerin of tragacanth was more easily made by using hot water.

Mr. MANN asked if the authors had considered whether heat merely delays, instead of altering, the action on the tragacanth.

Mr. LUCAS asked if raising the mucilage to the boiling point does not equal keeping it at 100° C.

Mr. EVERS, replying to the discussion, said that the preparation of all the mucilages mentioned in the paper had included the use of spirit. He had noticed that particles stained with an aniline dye looked large. He did not think that heat delays the absorption of water to any extent. Raising the temperature to boiling point was not so good as heating for an hour, but it was good enough for practical purposes. Gum tragacanth was valued in the market for its appearance, but that was no guide to its suspending power.

The next two papers were taken together, and were presented respectively in abstract by Mr. H. Deane and Mr. C. E. Corfield:—

The Estimation of Nux Vomica Preparations

By HAROLD DEANE, B.Sc., F.I.C., and W. E. EDMONTON

[ABSTRACT]

ONE of the difficulties in carrying out the B.P. method of estimating strychnine in preparations of nux vomica lies in the formation of an emulsion when the extract is shaken with chloroform and sodium carbonate. The greater part of the chloroform separates readily, but some remains persistently emulsified. This, of course, contains alkaloid, and is a source of error. We find that this emulsion can be avoided, and the determination carried out in a much shorter time, if benzol is substituted for the chloroform and the aqueous liquor is further diluted with water. Benzol is not such a good solvent for strychnine as chloroform, but any disadvantage due to this is overcome by the use of a larger quantity. It should be noted that the solvent used is benzol (B.P. 1898) and not the pure benzene of the B.P. 1914. The figures given in the table show that this process gives higher results than are obtained by the use of chloroform, this being due to the avoidance of the loss of strychnine in the emulsion. D. B. DOTT ("P.J." 1924 [4], 58, 337) showed that higher results are obtained if sodium hydroxide is used instead of sodium carbonate. He rejected the view that this difference was due to the more complete separation of the chloroform, but our results indicate that this is the correct explanation of his experiments, since when using benzol the results are identical, whether the carbonate or the hydroxide is used. Dry extract of nux vomica can be extracted with acidulated water and the solution shaken out with benzol and sodium hydroxide without the formation of an emulsion, thus avoiding the very slow extraction that is necessary to remove the strychnine completely with alcohol (70 per cent.). We give short directions for carrying out the estimation, and include the process of removing the brucine in the cold, as we consider it superior to the B.P. method (see DOTT, "Y.B." 1914, 331, *et al.*), but any other method may be used. We find that alcohol containing a minute proportion of amyl alcohol is a more effective preventative of decrepitation of the strychnine than pure alcohol, while it does not prolong the time of drying as the use of a larger quantity of amyl alcohol does.

Evaporate 10 c.c. of the liquid extract to a syrupy extract; dissolve in 60 c.c. of water and add 25 c.c. of 20 per cent. sodium carbonate solution (or 10 c.c. of 20 per cent. sodium hydroxide solution). Shake out with successive quantities of 50 c.c., 30 c.c., and 30 c.c. of benzol. Remove the alkaloids from the mixed benzol solution by shaking vigorously with three successive

quantities of 10 c.c. of *N*/1 sulphuric acid; add 2 c.c. of nitric acid and allow to stand for half an hour. Make alkaline with sodium hydroxide, and shake out with three portions of 10 c.c. of chloroform. Evaporate the chloroform, adding 2 c.c. of alcohol containing 1 in 250 of amyl alcohol towards the end, and dry to constant weight.

For the estimation of extractum nucis vomicae siccam take 3 gm. of the extract, warm with 20 c.c. of water and 5 c.c. of diluted sulphuric acid, filter on a filter pump; treat the residue again with warm acidulated water, filter and repeat. Add excess of sodium hydroxide and 50 c.c. of benzol and complete the estimation as for the liquid extract.

Solvent	Chloroform	Benzol	Benzol
Alkali	Na ₂ CO ₃	Na ₂ CO ₃	NaOH
Ext. Nucis Vom. Liq. A...	1.56	1.72	1.72
" " " B...	1.60	1.82	1.82
" " " C...	1.49	1.55	
Ext. Nucis Vom. Alc. ...	6.80	7.65	7.65
Ext. Nucis Vom. Sicc. ...	5.00		5.50

These experiments were carried out in the laboratories of Stafford Allen & Sons, Ltd., Long Melford.

The Assay of *Strychnos Cinnamomifolia*, and a Note on the Determination of Strychnine*

By G. R. R. SHORT, PH.C.

[ABSTRACT]

Strychnos cinnamomifolia is described by Hill ("Kew Bulletin," 4, 1917, p. 124) as a species of *Strychnos* containing a fair percentage of alkaloid, but there is no evidence that the seeds of this species have been commercially exploited. *Strychnos cinnamomifolia* is a large climbing species growing in Ceylon, and represented in Travancore by so closely allied a variety that the plants are considered to be identical. The seeds resemble closely those of the official species. The parcel submitted for analysis was part of a consignment of seed from Travancore, and it is believed that the seeds of this plant have not been analysed previously, although a sample of seed from Assam was analysed in these laboratories in 1917 and found to contain 2.07 per cent. of alkaloid consisting of brucine, together with a very small proportion of strychnine.

The seeds were reduced to a finely divided state, moistened with potassium hydroxide, and extracted with an ether-chloroform mixture. The solution was shaken out with acid, the acid layer treated with ammonia, and the alkaloid extracted with chloroform. The residue on evaporation gave reactions for alkaloid, and quantitative tests showed the presence of strychnine and brucine. No attempt was made to examine the alkaloidal residue for struxine, a new alkaloid found by Schaefer in a shipment of partly decomposed bean from Cochinchina, or for strychnine isolated by Boersma from the leaves of *S. Nux-vomica*. Quantitative determinations by various methods gave interesting results. The following figures give the final values obtained for this species: Moisture, 11.93 per cent.; ash, 1.42 per cent.; total alkaloids, 2.573 per cent.; brucine, 2.231 per cent.; strychnine, 0.342 per cent. Moisture was determined by drying to constant weight in a steam oven (twenty hours); total alkaloids by the process of the United States Pharmacopœia IX, with subsequent correction for the low strychnine-brucine ratio; strychnine, by a modification of the process of the British Pharmacopœia; brucine, by difference. In total alkaloidal content, therefore, this species is somewhat similar to the average *Strychnos Nux-vomica*, but while the alkaloid of the latter is about 50 per cent. strychnine, that of the former is approximately 13 per cent. strychnine.

Total Alkaloid.—By the method of the U.S.P. IX, the total alkaloid of *nux vomica* and its preparations is assayed by an aliquot-part process and the residue titrated with acid, using cochineal as indicator and a factor for the mixed alkaloids based upon a 50 per

cent. strychnine-brucine mixture. It is evident that this volumetric factor gives low results for titrations of mixed alkaloids in which the proportion of brucine is relatively higher. It was found that by weighing the residues the values obtained were about 10 per cent. higher than those obtained by titration. The mean values of a number of assays made were as follows: Gravimetrically (dried at 120° C.), 2.801 per cent.; volumetrically (U.S.P. factor), 2.432 per cent.; volumetrically (revised factor), 2.573 per cent.

Strychnine.—By the process of the British Pharmacopœia, strychnine in *nux vomica* and its preparations is assayed gravimetrically, after treating a solution of the alkaloids with nitric acid for ten minutes at 50° C. The accuracy of this method has been commented upon by different investigators, including Dott, Deane, Jensen, Corfield and Self, and the results obtained by the various modifications have been compared. By the official method the results were approximately 33 per cent. higher than those calculated by titration, but owing to the presence of an appreciable quantity of nitrate in the residue the former are evidently too high and the latter correspondingly low. On correcting for this low basic value of the residue the figures by titration were about 5.5 per cent. lower than the gravimetric. The mean values were as follows: Gravimetrically, 0.362 per cent.; volumetrically, 0.242 per cent.; volumetrically (corrected), 0.342 per cent. Determinations were also made by treatment with nitric acid at about 20° C., as recommended by Dott, Deane, and Jensen, and somewhat similar observations were made. The gravimetric figures were higher than those obtained by titration, and the residues contained nitrate. When corrected for the obviously low basic value of the residue, the titration figures were in agreement with those obtained in the previous experiments with nitric acid at 50° C. The mean values were as follows: Gravimetrically, 0.356 per cent.; volumetrically, 0.271 per cent.; volumetrically (corrected), 0.342 per cent. In conclusion, it may be noted that in so far as the examination of this species is concerned, treatment with nitric acid at the lower temperature gives the more accurate result when the alkaloidal residue is weighed, and that a temperature of 20° C. or 50° C. is of little importance when the percentage of strychnine is obtained by titration and corrected for strychnine nitrate present.

DISCUSSION

Mr. DOTT disclaimed the explanation in respect of emulsification attributed to him in the paper, and said that he left it an open question. He was pleased if the point was settled. Benzene was frequently used by him in assaying, and was preferable to chloroform or ether; it could, however, be mixed with either to make more certain. Sufficient time (20-25 minutes) should be allowed, and sufficient nitric acid should be used.

Dr. HOOPER, who was cordially greeted, said that *Strychnos cinnamomifolia* was a species that he collected twelve years ago in Travancore. It was very important to analyse the seeds of different species. In Burma there was a species of *Strychnos* that contained no strychnine.

Mr. EVERS asked whether Mr. Deane knew why a large excess of alkali was added before extracting the strychnine.

Mr. DOTT pointed out that, when a mixture of brucine and strychnine was treated with nitric acid, the strychnine was liable to crystallise out.

Mr. GERRARD said that he had successfully adopted a suggestion to add a trace of tallow or any fat before separating out.

Mr. DEANE, replying, said he had no idea why so large an amount of alkali was ordered in the British Pharmacopœia.

The other papers (held over by reason of pressure on space) read at this session were: "The Identification and Classification by Chemical Methods of Drugs containing Tannin," by C. J. Jordan and A. H. Ware; "Tests for Drugs containing Tannins," by A. H. Ware; and "The Rhizomes of *Helleborus Niger* and *H. Viridis*," by T. E. Wallis and A. M. Saunders.

*Contribution from the Research Laboratories of the Pharmaceutical Society.

Who Were There :

The following took tickets to the Conference, and, in most cases, signed the visitors' book :—

Adams, F. W., Pinner
Adams, Miss, London
Antcliffe, H., and Mrs., Sheffield
Appleton, J. T., and Mrs., Sheffield
Arthur, H. P., Glasgow
Aspell, J., and Miss, Bath
Barnwood, R. M., Gloucester
Bayles, H., London
Bayne, T., Edinburgh
Beacock, J. H., Leeds
Beardsley, W. J., and Mrs., London
Bedell, Miss M. I., Carshalton
Bell, J. T., Birmingham
Bennett, R. R., and Mrs., Harrow-on-the-Hill
Bilson, F., and Mrs., Bourne-mouth
Bodley, —, Bristol
Bolton, Miss M., Hull
Bolwell, A. E., Bath
Bonner, C. G., Mrs., Miss T. L., and Miss W. B., London
Boorne, H. E., Bristol
Bown, W. H., and Mrs., Southsea
Boyes, G. R., London
Brembridge, R., London
Briggs, A. R., and Mrs., Horbury
Broad, Mr. Mrs., and Miss, Bath
Browne, W. Mrs., and Miss E. K., London
Bryant, E. G., Aberdeen
Butcher, R. J., Parkgate
Caine, J. C., and Mrs., Birkenhead
Chalmers, W., and Mrs., London
Chapman, W., Shotts
Clarke, R. Feaver, and Miss, New Milton
Cleworth, J., and Mrs., Manchester
Cooke, C. W., Hoylake
Cooling, F. C., Birkenhead
Cooper, W., Bath
Corfield, C. E., London
Cresswell, F., Lee
Crossley-Holland, Dr. and Mrs., London
Davies, H. O., Pontypridd
Deane, H., and Mrs., Sudbury
Dickson, D., and Mrs., London
Dixon, A. L., London
Dolbean, J., Oxford
Dott, D. B., Edinburgh
Dow, W. B., London
Dowden, Miss, London
Downing, J., and Mrs., London
Duff, P. M., Glasgow
Dyer, F., Cardiff
Eastwood, P. E., and Mrs., Manchester
Edwards, R. G., and Mrs., Manchester
Elder, A., and Mrs., Birkenhead
Ellerington, J. P., London
Evans, D. A., and Mrs., Bath
Evers, N., and Mrs., London
Falding, W. B., London
Ferriday, A. J., and Mrs., Liverpool
Finnemore, H., and Mrs., London
Fish, Miss, Manchester
Flick, J., London
Foster, H. S., London
Foster, W., Seaham Harbur
Fouracre, R., London
Fowler, W. H., Mrs., Miss D. M., and Miss I., Redhill
Fraser, John, Dumfries
Freke, A. Mrs., and Miss, London
French, J. E., and Mrs., Sittingbourne
Gadd, H. W., Exeter
Gamble, F. W., and Mrs., London
Gaze, W. E., London
Gedge, Mrs., Bath
Gemmell, D., Beith
Gerrard, A. W., and Misses, Birmingham
Gilleghan, H., Leeds
Gilmour, J. P., London
Glass, W. S., and Mrs., Edinburgh
Glyn-Jones, Sir W., and Lady, London
Glover, R. G., Wallasey
Gray, W., London
Greenish, H. G., London
Grier, J., and Mrs., Manchester
Guthrie, T., Glasgow

Hall, A. L., and Mrs., Winchcombe
Hallett, W. H., Bath
Hallett, W. J., and Mrs., Bath
Hampshire, C. H., London
Hardy, T., and Mrs., Maryport
Harvey, F. M., London
Hatton, W., and Mrs., Bath
Hawes, J. C. H., Bath
Hay, J. T. W. W., Bolton
Higgs, A., Kingston-on-Thames
Hill, C. A., London
Hill, J., Ipswich
Hill, J. R., Edinburgh
Hines, F. G., and Mrs., York
Hooper, H. D., Bristol
Howard, D. L., Ilford
Hughes, M. S., and Mrs., Liverpool
Ingdis, F., Stockport
Irvine, P., and Mrs., London
Irwin, H. A., and Mrs., London
Jackson, J. G., and Mrs., Sheffield
Jenkin, A. H., London
Jenkin, C. Mrs. and Miss, Bath
Jones, A. J., Liverpool
Jones, H. H., and Mrs., Liverpool
Jones, J. G., Loughborough Junction
Keith, A. R., and Mrs., London
King, F. H., Westcliff-on-Sea
Kingston, J. G., Bath
Knott, P., and Mrs., Bolton
Lander, N., Huddersfield
Lawman, F. A., and Mrs., London
Layman, F. N., London
Lees, J., Oldham
Lescler, T. E., London
Lester, L. W., London
Lewis, T., Cardiff
Lloyd, H. M., Merthyr Tydfil
Lloyd, H. O., and Mrs., Southport
Lloyd, J., and Mrs., London
Longdin, J. E., Scarborough
Loveless, E. W., and Mrs., Bath
Lucas, N., and Mrs., Brixton Hill
Lynn, M., Bath
Mackenzie, T., Inverness
McMillan, A., Glasgow
Mallinson, G. A., London
Mann, E., and Mrs., Birmingham
Marns, T., and Mrs., London
Marsh, A. E., Leicester
Marsh, O., Mrs., and Miss, Wallasey
Matthews, Mrs., Bristol
Melhuish, A. R., and Mrs., London
Mitchell, P., and Mrs., Dumbarton
Moore, G. H., Bath
Moore, R. F., and Mrs., Sudbury
Moore, R. H., Bath
Morris, T., and Mrs., London
Morson, T. D., London
Mumford, H. G., and Mrs., London
Neave, Mr. and Mrs., Bath
Nicholl, I. W., Belfast
Noble, C. A., and Mrs., London
Norwood, J., and Mrs., Wath-upon-Dearne
Olds, A. C., and Mrs., Bath
Parry, L. M., Liverpool
Payne, Dr., Stornoway
Pearson, Miss, London
Peck, E. S., Cambridge
Pegg, I. A., and Mrs., Mansfield
Phillips, F. D., Haverfordwest
Phillips, S. D., and Mrs., Wolverhampton
Pidd, A. J., and Mrs., Manchester
Poole, J., and Mrs., Birmingham
Quant, Mr., and Miss, Torquay
Ramsey, D., Glasgow
Rees, D. A., London
Rees, T., Corsham
Richards, H., Swansea
Richardson, A., Hull
Roberts, H., and Mrs., Leeds
Roper, H., and Mrs., Newcastle-on-Tyne
Rowland, Sir Leonard, Wrexham
Rowell, P. F., Mrs., and Miss, Exeter
Sargeant, F. P., and Mrs., Leeds
Saunders, W. H., and Mrs., Liverpool
Scholes, W. I., Eccles

Shepherd, W. J., Barnstaple
Shircliff, W. E., London
Sidebottom, S. H., and Mrs., Accrington
Simmons, E. H., and Mrs., Salford
Skinner, H., and Mrs., London
Smith, F., Mrs., and Miss, Birmingham
Smith, M., and Mrs., Birmingham
Smith, R., Stornoway
Southernden, F., Exeter
Stainer, J. W., Folkestone
Stelfox, J. A., and Mrs., Birkenhead
Stephenson, T., Edinburgh
Sutcliffe, W., and Mrs., Bradford
Symmons, Mrs., Oxford
Symonds, J. A., and Miss, Ipswich
Taylor, A. L., Bristol
Thompson, P. J., and Mrs., Bath

Tocher, G. A., London
Tristram, W. J., Liverpool
Umney, E. A., Mrs., Miss B., and Miss E., London
Walker, C. F., Manchester
Want, W. P., and Mrs., London
Ware, A., Exeter
Waring, E. S., and Mrs., Nottingham
Weir, J., Clydebank
White, E., and Mrs., London
Williams, D. J., and Miss M., Bath
Williamson, Miss A., Preston
Willmott, F., Radstock
Wilson, L., and Mrs., Bath
Wilson, W. P., Haddington
Winch, Miss, Sunderland
Wokes, F., Liverpool
Wood, Mrs., Wallasey
Worraker, Miss, London
Wyatt, W., and Mrs., Manchester

Association Affairs

Eastbourne.—The Eastbourne Pharmacists' Association held a meeting recently. A resolution calling the attention of the Chamber of Commerce to the gradual increase in the number of kiosks on the sea front, the bulk of which are unnecessary and manifestly unfair to the heavily-rated shopkeepers in the town, was unanimously agreed to. The Secretary was instructed to write to the Council of the Pharmaceutical Society and to express the Association's thanks for their spirited action in the negotiations with the War Office as to the status of pharmacists in the Army, and to further express their approval of the proposed policy of placing the facts before Parliament and the public. The pricing of prescriptions, stock keeping and business training were among the subjects suggested for consideration during the coming winter session, and the difficulty experienced with dater foods was discussed. The Pharmaceutical Committee unanimously elected Mr. F. J. Crisford deputy representative on the Insurance Committee.

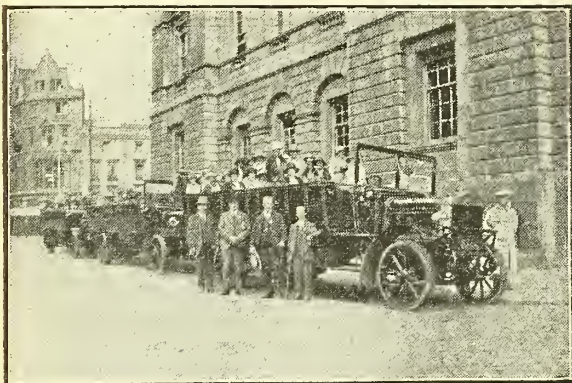
Edinburgh.—The Edinburgh Chemists', Assistants' and Apprentices' Association held the annual summer meeting in the Pharmaceutical Society's House, 36 York Place, Edinburgh, on July 11, Mr. Eric Knott, Ph.C. (Vice-President) in the chair. Field specimens collected by Miss M. M. Smith at Aberlady, Miss I. A. Purdie and Mr. P. Fenton at Kirkcaldy, and Mr. J. W. Laing were arranged in systematic order, and included 33 orders, 76 genera and 89 species. These formed the subject of an interesting practical demonstration by Mr. J. Rutherford Hill, Ph.C. Acknowledgment was made of the help rendered by the collectors, and on the motion of the Chairman a vote of thanks was awarded to Mr. Rutherford Hill. Names were taken for the competition for the Duncan Botanical Prize (value £1 1s.), which is awarded to the competitor taking first place in a practical examination on the work of the summer session. Entries should be in the hands of the Hon. Secretary, Mr. J. W. Laing, 85 Polwarth Gardens, not later than July 31.

Eastbourne.—The Eastbourne Pharmacists' Association held a meeting recently. A resolution calling the Sparrow, who is shortly leaving the town, was presented with a gold cigarette-case, suitably inscribed, on behalf of the members. The President (Mr. W. R. Atterbury) remarked that Mr. Sparrow was always ready to do a good turn at every opportunity. His activities would be missed in many charitable and social organisations, and in the name of the Association he wished Mr. Sparrow health and happiness in his new undertaking. Mr. Sparrow having replied, the annual reports of the secretary and treasurer were adopted, and £5 5s. was voted to the Pharmaceutical Society benevolent and orphan funds. The officers for the ensuing year were re-elected as follows:—*President*, Mr. W. R. Atterbury; *Vice-President*, Mr. W. H. Bown; *Treasurer*, Mr. W. L. Egerton; *Secretary*, Mr. F. H. Ruoff; *Council*, Messrs. Farling, Fry, Hart, Hemming, Hill, Murray, Parsons, and Thorpe; *Auditors*, Messrs. Postlethwaite and Rhodes.

The Social Side

The inscription on some of the railway tickets, which read "Picnic Pleasure Party," may have been suggested by one of those engaging word competitions in the popular weekly papers. Some of the London members, it is true, had lunched rather lightly.

Uncertain weather led to the transference of the venue for the reception given by the Mayor and Mayoress on Monday from the Sydney Gardens to the Pump Room; but the sports arranged for took place a little later in the Gardens, and the Conference members were in reality the gainers by the change. In the delightful Room itself was shown the corporation regalia—maces, sword, cups and so forth, some of them old and all of them



Photo] PARTY LEAVING FOR LIMPLEY STOKE VALLEY [Cleworth

exquisite; and the company spread itself through the concert room (another handsome hall) and around the great Roman Bath. Here, in the brilliant light of an ideal day, visitors duly admired the relics of an older civilisation. The veterans of pharmacy were present in strong force—Mr. A. W. Gerrard, Mr. R. Feaver Clarke, Mr. Richard Bremridge, Mr. A. J. Pidd, and several others. It was interesting to learn that Mr. Feaver Clarke had not visited Bath since his school days, seventy years ago. A dramatic entertainment followed the reception.

The first excursion for the ladies was through the impressive beauty of Limpley Stoke Valley. The autocars left the "Empire" Hotel at 11.30, and they found the valley air apparently more to their liking than the dry-as-dust dissertations at the opening session. They all professed themselves delighted, however, with the witty and genial speech of welcome delivered by the Mayor, and the equally pat reply by the President of the Pharmaceutical

Society, in thanking the Mayor for his welcome. The views in the valley and the early English charm of the villages—such as Hinton Charterhouse—through which they passed, made them enthusiastic regarding the lure of the district. And so to luncheon at the Pump Room.

After luncheon, on Tuesday afternoon, there was a very enjoyable ladies' excursion through the beautiful valleys and uplands from Bath to the quaint little village of Castle Combe. It was noticeable that many of the male visitors, who confessed to an overdose of bismuth salts, joined in the excursion. The party was conveyed in six charabancs, and although some of the hills were rather steep and several had visions of "missed gear" on the part of the chauffeur, nothing untoward happened. Everyone was charmed with the beautiful country-side, the old-world villages and the efficient drivers. The only serious complaint came from a Scotchman, who had to sit for a time on the front seat of his car, the engine of which was rather hot, and he was sure that his legs would be so scorched that he would not be able to wear his kilt with dignity for some time to come.

The excellent music discoursed by the band of the King's Royal Rifles at the sports on Monday evening served to assuage the feelings of the scratch team of bowling pharmacists, who were defeated by the team of the Mayor of Bath by something like 156 to 56. The full scores are given in the "Bath Herald" of July 22, but there seems no object in emphasising the fact that pharmacy was the losing side.

The perfection of the arrangements made by the Local Committee, headed by Mr. D. J. Williams, was sufficiently shown in the smooth working of the programme. If any question arose, there was always someone at hand to dispose of it quietly and adequately, with or without the aid of a card index.

On the Saturday preceding the Conference, a Manchester party arrived early in the afternoon, and promptly interviewed Mr. Hallett, who suggested a tour of the beauty spots of the town. Accordingly, after tea, they were taken (with the addition of Mr. and Mrs. H. Lucas, London) to Coombe Down, there to admire one of the finest views in the British Isles. On Sunday, quite a number of visitors attended morning service at the Abbey, and were welcomed from the pulpit. In spite of a showery afternoon, they made the acquaintance of the beautiful Sydney Gardens; and on Monday morning a party from Lancashire, by the kindness of Mr. Hallett, had a motor-car placed at their disposal for a run to Wells and Glastonbury—an experience of unalloyed enjoyment.

The Conference banquet, held in the Pump Room on Tuesday evening, owed as much, perhaps, to its



Photo] THE CONFERENCE TEAM [Cleworth



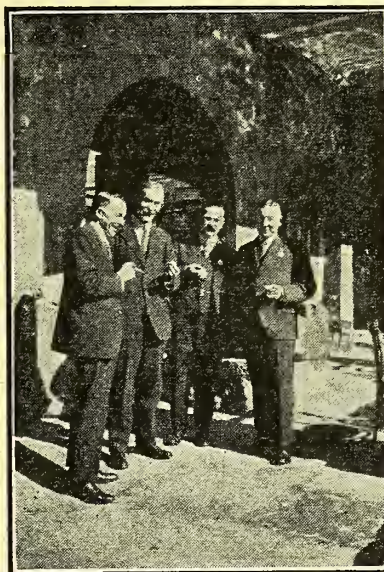
Photo] THE MAYOR'S TEAM [Cleworth

milieu as to any other circumstance. Supporting the chairman (Mr. Edmund White) at the top table were the Mayor and Mayoress of Bath, Mr. F. P. Sargeant, Sir William and Lady Glyn Jones, Mr. Philip F. Rowsell, Mr. J. Basil Ogden (town clerk of Bath), Dr. A. E. Norburn, Mr. F. W. Gamble, Mr. D. Lloyd Howard, Mr. D. J. Williams, Mr. C. A. Hill, Mr. E. Saville Peck, Mr. A. R. Melhuish, and several ladies in addition to those mentioned. The full strength of the Conference seated itself at the spur tables, and overflowed into another hall. After dinner, those from without came into the Pump Room to hear the speeches, the clock of Tompion looking benignly on. Music of a high order of merit alternated with the speeches, and it is of interest to record that one of the artists is a member of the local staff of Messrs. Boots. The Pharmaceutical Society and the Conference were for the first time, probably, united in a single toast, proposed in thoughtful sentences by Mr. D. J. Williams. In response, Mr. Sargeant referred in eulogistic terms to the West Country and to the work of G. F. Schacht and R. W. Giles, two West Country pharmacists, who were both alumni of the Society's School. Mr. Sargeant's opportunities as a member of the Society's Council, and even as Vice-President, have hardly been of a nature to prepare his audience for the force and polish of his utterance on this occasion; it is safe to say that his speech took most of those present by surprise, and proved to be the event of the evening. Our heritage, said the President in conclusion, was to be handed on in a more brilliant state; and he himself was fortunate in having the most loyal Council a President could wish to have. The applause at the close of the speech continued until Mr. Sargeant rose and bowed. Mr. White, who followed, on behalf of the Conference, said that Mr. Sargeant had so affected him that he could not even be funny. (Laughter.) Next year the Conference would probably meet at Glasgow. The Scottish people were a bigoted race—(laughter)—but not such bad people. Mr. Gamble, in proposing the toast of "The City of Bath," said that, as a stranger, he had quickly become susceptible to the charms of the city. He recalled the toast, in similar circumstances, of a learned man who had occupied forty minutes in proposing a toast, to which it had taken forty-five minutes to respond. For his (the speaker's) part, he had been content to study the guide-book and to read the advertisements. Their claims were all justified, and the gathering appreciated very heartily the welcome given.

The Mayor, who received an ovation on rising to respond, remarked that he was taking the place of a pharmacist, Mr. Jenkin, who last October was expected to occupy the chief magistracy. He (the speaker) was glad to welcome the gathering in that historic room, amid all the associations linking them with the city—a city unrivalled and to a large extent unchanged. The remaining toast, that of "Our Guests," was given in cordial and appropriate terms by Mr. Philip F. Rowsell, Mayor of Exeter, who reminded the company that, in

addition to those whose names were associated with the toast, there were present two members of the Bath Insurance Committee. The town clerk of Bath and Dr. A. E. Norburn briefly replied.

City and country were attractively mingled in the route adopted for the drive on Wednesday afternoon. Striking south, the charabancs climbed up what must be one of the longest hills in Great Britain, the road winding in and out, with fresh vistas ever appearing, until



Photo] [Cleworth

Left to Right: MR. C. A. NOBLE, MR. R. R. BENNETT, MR. J. KEALL, DR. F. W. CROSSLEY-HOLLAND.

a height of about 550 feet was reached. Then the road dipped sharply, passing Prior Park (once Ralph Allen's seat), and the party was driven back into the city by Great Pulteney Street, and eventually through some of the most famous thoroughfares to Victoria Park for tea.

On returning to the city, a visit was paid to the bathing establishment. Following a few words by Mr. John Hatton, the director of the Baths, a most interesting and well-thought-out tour of the buildings was commenced, during which the various forms of treatment were explained. Arriving at the Roman Baths, the Conference photograph was taken; and Mr. Alfred Taylor, architect to the Baths Committee, gave, in the brief time at his disposal, an informative account of the early history and recent excavation of the baths. A dance was held later.



Photo]

LADIES ON THE PUTTING GREEN

[Cleworth



Photo]

MANCHESTER PHARMACISTS PUTTING
Left to Right: MR. R. G. EDWARDS (President), MR. D. DICKSON,
MR. E. H. SIMMONS

Trade Report

The prices given in this section are those obtained by importers or manufacturers for bulk quantities or original packages. To these prices various charges have to be added, whereby values are in many instances greatly augmented before wholesale dealers receive the goods into stock, after which much expense may be incurred in garbling, packing, etc. Qualities of chemicals, drugs, essential and fixed oils, and many other commodities vary greatly, and higher prices than those here quoted are charged for selected qualities of natural products even in bulk quantities.

42. Cannon Street, E.C.4, July 23.

BUSINESS conditions remain much as previously reported, and, so far as crude drugs are concerned, the bi-monthly auction claims attention this week. Privately, menthol is inactive and a little easier again. Balsam tolu is very scarce, spot supplies being almost unobtainable. Peru is steady, and B.P. copaiba firm. New crop cascara sagrada meets with active competition, and at the lower prices a good deal of business has been done lately. Chamomile crop prospects continue to improve, and buyers hold off, pending lower prices. New crop senega is offered at lower rates. Coriander seed has been in good demand for new crop, and sellers are asking an advance. Castor oil is 3s. higher; Hankow wood oil has sharply advanced; while coconut, cotton, and palm oils close firm. Business in pharmaceutical chemicals has been on an improving scale, most of it being due to speculation based on the firmer conditions in Germany. Bromides in particular show a further advance, and supplies are much less plentiful. Chloral hydrate has hardened further; salicylic acid is weaker, and methyl salicylate unsteady. The market tone in heavy chemicals keeps quite steady. Red and white lead and litharge are dearer, while acetic acid shows a further decline. Mercury is easier.

Higher	Firmer	Easier	Lower
Albumen	Chloral hydrate	Anise (star) oil	Acetic acid
Balsam tolu	Cottonseed oil	Bergamot oil	Cresote oil
Bromides	Cream of tartar	Cajuput oil	Eucalyptus oil
Castor oil (Eng.)	Paraldehyde	Canary seed	Ipecacuanha (M.G.)
Cedarwood oil	Resorcin	(Morocco)	Lemon oil
Coriander seed		Citronella oil	Rhubarb
Geranium oil		Menthol	(rgh. rd. H.D.)
(Algerian)(c.i.f.)		Mercury	Salicylic acid
Litharge		Orange oil	Senega (new crop)
Red lead		Palm-kernel oil	Sodium nitrite
Rubber			
Vetivert oil	Steadier		
(Bourb.)			
White lead			
Wood oil	Cod liver oil		
(Hankow)			

Exchange Rates on London

The following is a list of Continental and other exchange rates against the pound sterling on London prevailing at 4 p.m. on Wednesday:—

Place	Method of Quoting	Par of Ex-change	July 16	July 23
Amsterdam	Fl. to £	12.107	11.55½—11.56	11.49½—11.50½
Berlin	M. to £	20.43	18.30—18.40 bilms*	18.40—18.60 bilms*
Brussels	Fr. to £	25.22½	95½—95½	95½—96
Calcutta	Per rup.	24d.	17½d.—17½d.	17½d.—17½d.
Christiana	Kr. to £	18.159	32.45—32.50	32.83—32.86
Constantinople	Ps. to £	110	850—865	855—865
Greece	Dr. to £	25.22½	256—258	254—256
Italy	Lire to £	25.22½	101½—101½	101½—102
Kobe	Per yen	24.58d.	22½d.—22½d.	22½d.—22½d.
Lisbon	Escu.	53½d.	1½d.—1½d.	1½d.—1½d.
Madrid	Pts. to £	25.22½	32.86—32.88	32.89—32.91
Montreal	\$ to £	4.86½	4.40—4.40½	4.42½—4.42½
New York	\$ to £	4.86½	4.37½—4.37½	4.39½—4.39½
Paris	Fr. to £	25.22½	84.55—84.65	85.85—85.90
Singapore	Per dol.	—	27½d.—28½d.	27½d.—28½d.
Switzerland	Fr. to £	25.22½	23.97—24.00	23.94—23.97
Vienna	Kr. to £	24.02	308,000—312,000	312,000—315,000

* Nominal.

Cablegram

NEW YORK, July 24.—Business is quiet. Menthol is lower at \$10.75 per lb. Mandrake root has been reduced to 16c., and senega to 60c. per lb. Mercury is cheaper at \$71.50 per flask. Curaçao aloes has advanced to 8½c., and balsam tolu to \$1.85 per lb.

Crude Drugs, etc.

ALBUMEN is dearer, with spot sales of prime Chinese egg up to 4s. 6d. to 4s. 7d. per lb.; sales also include afloat parcels, July-August and September-October shipment at 4s. 5d. c.i.f., and buyers at this figure.

ANTIMONY is a little steadier, but actual business has remained restricted. English ordinary brands stand at £44 10s., and special brands range up to £47 10s. Metal held in warehouse could be obtained at about £41, while c.i.f. terms for forward shipment are about £33. Fair lines came to hand lately from China.

BALSAM PERU is steady at 8s. per lb. for genuine B.P.

BALSAM TOLU is dearer at from 8s. 6d. to 9s. per lb. Supplies are very scarce and difficult to obtain.

CADMIUM.—The market keeps very steady under a regular, fairly brisk demand at from about 2s. 3d. to 3s. per lb.

CAMPHOR (REFINED) is steady at 2s. 11d. per lb. for Japanese refined slabs, and for prompt shipment 2s. 11d., c.i.f., is quoted; ¼-oz. tablets are offered at 4s. 1d. per lb.

CASCARA SAGRADA.—New bark is still subject to keen competition for shipment, and prices are from 72s. 6d. to 75s. per cwt., c.i.f. Spot is quoted at 170s. for three-year-old bark.

CHAMOMILES.—The prospects for the new Belgian crop continue to improve, and although there are sellers down to 160s. per cwt., buyers continue to hold off, in anticipation of still lower prices.

CINCHONA.—At the auction held in Amsterdam, on July 16, of 40,406 kg. Java pharmaceutical bark, representing 1,012 kg. quinine sulphate, offered for sale, 21,090 kg. (=497 kg. quinine sulphate) were disposed of at from 43 and 119 cents per half kilo. The demand was satisfactory at advancing prices. The next auction will be held on August 27.

CLOVES.—Zanzibar close easier at from 1s. 1d. to 1s. 1½d. per lb., as to quality; for October-December shipment 10½d. to 10½d. c.i.f. has been paid.

COD-LIVER OIL.—Our Bergen correspondent writes on July 14 that sales are small at the unaltered price of from 89s. to 90s. per barrel, c.i.f. London.

COPAIBA is firm at 2s. 2d. per lb. for B.P.

GINGER.—The "Palma," from Sierra Leone, has brought 786 bags. Spot price of this description is 80s. per cwt. As there are no further forward offers it is assumed that the crop has been shipped, but nothing definite can be said.

MENTHOL has slightly declined, spot sellers of Kobayashi-Suzuki quoting 47s. 6d. per lb. For July-August shipment sellers quote 47s. c.i.f. The "Lyons Maru," from Kobe, has brought 25 cases, and the "Andes Maru" 70 cases.

MAGNESIUM has remained quite firm, there being a fair demand on the basis of about 3s. 3d. up to 4s. per lb. for sticks, according to quality. Powder is in fair request at from 4s. 6d. to 5s. 6d.

MERCURY has remained inanimate, with buyers rather hopeful of renewed concessions in view of the very liberal supply which is, it is claimed, held in second hands. Export business continues idle, which is the more suggestive of the cautious attitude of buyers abroad, considering that London spot prices are relatively low compared with producers' terms. A few small lots were done here at £13 per bottle lately, but in the event of firm offers to buy fair quantities could presumably be secured at between £13 and £12 15s.

NUTMEGS are firm, with spot stocks of East Indian light and in few hands. Prices are higher than for many years past. West Indian are also scarce, and shippers do not care to make forward offers until they know what the American demand is likely to be.

PEPPER is firmer, with fair black Singapore offering at 4½d. per lb. on the spot, and for July-September 4½d., c.i.f., is quoted; fair Lampung is 5d. spot, and for

August-October shipment 4½d., c.i.f., has been paid, also October-December at 4½d., c.i.f., fair Tellicherry is 5d. and Alleppy 4½d. spot. White Muntok is firm at 8d. to 8½d. per lb. on the spot. The sales include July-September shipment at 8½d., c.i.f., and August-October at 8½d. to 8½d., c.i.f.

PIMENTO is rather easier forward and unchanged on the spot at 2½d. per lb.

RUBBER.—The firm tendency reported last week has been fully maintained, and although at one time prices eased slightly, there was a quick recovery, and at the close 1s. 0½d. was bidding for spot. The general tone has been decidedly firm, and it is very difficult to purchase any large quantity without influencing the market. We find there has been a distinctly better feeling in New York, which has been supported by a fair number of orders during the past week, in spite of the exchange having gone against America. A feature is the decided shortage in crepe, for which a premium over sheet is easily secured. The arrivals last week exceeded the deliveries by 493 tons, and the present London stock now stands at 51,505 tons. Quotations (Wednesday, 5 p.m.):—No. 1 standard crepe and ribbed smoked sheet, spot and July, 1s. 0½d.; August, 1s. 0½d.; September, 1s. 0½d.; October-December, 1s. 0½d.; January-March, 1s. 0½d.

SEEDS.—The following are current quotations:—ANISE: Spanish is quoted at 75s., and Russian at from 61s. to 65s. per cwt. CANARY SEED is quiet; Mazagan on the spot is 27s. 6d. per cwt., and Spanish of good quality is 35s. CARAWAY SEED, Dutch 65s. per cwt. on the spot, Morocco 70s.; CUMIN SEED, Malta 102s. 6d. to 105s. per cwt., Morocco 95s. on spot; CORIANDER SEED has been in good demand, with business in new crop at 21s. 6d. to 22s. 6d. per cwt. on the spot, and sellers are now asking 23s. c.i.f.; DILL SEED, 20s. to 21s. per cwt.; FENNEL SEED, Indian 40s. per cwt.; FENUGREEK SEED, Morocco 20s. to 22s. per cwt., and Spanish 18s.; HEMP SEED, 17s. 6d. per cwt.; Morocco LINSEED, 23s. per cwt.; MUSTARD SEED (English), 36s. per cwt.

SENEGA.—New crop has been offered at the cheaper price of 2s. 7d. per lb., c.i.f.

SOY.—Usual Hong Kong brands are quoted at from 2s. 7d. to 2s. 8d. per gallon, duty paid.

TAMARINDS.—The Customs duty on tamarinds was reduced on July 1 from 5s. 8½d. per cwt. to 2s. 7½d. per cwt. Arrivals include 349 barrels from Barbados and 90 barrels from Antigua.

Essential Oils

PRICE changes favour the buyer in the majority of cases this week, but demand is quiet. American cedarwood is scarce and dearer, and Algerian geranium has advanced for forward delivery. Bourbon vetiver is also difficult to find, and high prices are quoted. Gingergrass, which for a long period was neglected, is unobtainable on spot, even at the relatively high rates offered. Bergamot is cheaper, and lemon is lower following a disappointing spot demand. The following oils have slightly declined: Star anise, cajuput, citronella and eucalyptus oils.

ANISE (STAR).—"Red Ship" on the spot is weak, with sellers at from 2s. 4d. to 2s. 4½d. per lb. The price quoted for shipment is 2s. 1d., c.i.f. to arrive.

BERGAMOT is cheaper on the spot at from 17s. 3d. to 17s. 9d. per lb. for 37 to 38 lb., according to brand. The price quoted generally for shipment is 17s. 6d., c.i.f. to arrive.

BOIS DE ROSE (FEMELLE) has been in demand; sellers quote 19s. to 20s. per lb.

CAJUPUT is slow of sale and slightly easier at 3s. 1d. per lb. for spot.

CAMPOR.—White essential oil is quoted at 62s. 6d. per cwt., in large drums; 67s. 6d. in cases.

CASSIA.—On the spot sellers quote 7s. 3d. per lb. for 80 to 85 c.a. During the week an isolated parcel was sold at 7s. The c.i.f. price to arrive is 6s. 11d.

CEDARWOOD.—American has been sold in large drums at 2s. per lb., and prices have again advanced, from 2s. 1d. to 2s. 2d. being now quoted.

CINNAMON.—For Ceylon leaf on the spot from 5½d. to 6d. per oz. is quoted. Mysore distillate is 8s. 6d. per lb.

CITRONELLA.—Ceylon on the spot is quiet and easier, with sellers at 3s. 4½d. to 3s. 5d. per lb. The price quoted for July-August shipment is also cheaper at 3s. to 3s. 1d., c.i.f. Ceylon estate oil is again being offered on the spot, 3s. 7½d. being the price mentioned. There has been some inquiry

for Java on the spot at 5s. 4½d. per lb., and shipment near at hand is 5s. 3d., c.i.f. to arrive.

DILL.—B.P. oil is steady on the spot at 24s. per lb.; East Indian is 23s.

EUCALYPTUS.—Demand is quiet and spot is easier again at 1s. 11½d. per lb. for 70 to 75 cineol; 2s. is quoted for 75 to 80, and 2s. 1d. for 80 to 85.

GERANIUM.—Bourbon on the spot is firm, with prices unchanged at 34s. to 35s. per lb. as to seller. Algerian is firmer to come forward, and spot sellers are quoting generally 35s.

GINGERGRASS.—Supplies on the spot appear to be practically exhausted.

LEMON is cheaper on the spot, with sellers at from 2s. 10d. to 3s. per lb. In some directions higher quotations have been made at from 3s. to 3s. 2d., c.i.f. to arrive.

LEMONGRASS.—Cochin on the spot is quiet and unchanged at about 3s. 6d. per lb. for large drums and 3s. 2d. to 3s. 3d. c.i.f. is quoted for shipment.

MINT.—Japanese dementholised Kobayashi-Suzuki is steady at 14s. per lb. on the spot; 13s. 6d. c.i.f. for parcels afloat is quoted. The "Andes Maru" has brought 60 cases from Kobe.

ORANGE.—Sicilian sweet is easier to arrive at 10s. 3d. to 11s. per lb., c.i.f. as to brand. Spot is unchanged at 10s. 6d. to 11s. 6d. per lb.

PEPPERMINT.—American natural tin oil has sold recently at 19s. per lb.

SASSAFRAS.—Genuine American is quiet and unchanged at 8s. to 8s. 3d. per lb.

VETIVER.—Bourbon on the spot is scarce and dearer. For recent arrivals 45s. per lb. is quoted. Java oil is 56s.

Pharmaceutical Chemicals, etc.

BUSINESS seems to have been on a larger scale during last week, but much of this activity may be due to speculation on account of the rumour of firmer conditions in Germany and a scarcity of supplies of some materials. Bromides show a further jump, with the spot market bare of supplies. One or two other items are also rather firmer.

ACETANILIDE is offering on spot close to 2s. 3d. per lb., but the demand is not large.

AMIDOPYRIN is steady but quiet, with dealers offering at about 14s. 3d. per lb.

ASPIRIN keeps very steady, with business up to average. Dealers quote for good brands at 2s. 3d. to 3s. 4d. per lb. for quantities.

BARBITONE shows no change at from 15s. to 15s. 6d. per lb. BENZONAPHTHOL is seldom called for; quoted at about 5s. 3d. per lb.

BETANAPHTHOL is steady but quiet at about 3s. 6d. per lb.

BROMIDES.—There is very little good spot material left on the market after continued heavy buying following the rumour of much dearer prices from Germany for shipment and the possibility of a shortage. Ammonium, from 1s. to 1s. 1d. per lb.; potassium, B.P. crystals and granular, about 10d. per lb.; sodium, B.P. crystals and granular, about 11d. per lb. These prices are quoted for reliable make.

CALCIUM LACTATE continues to sell fairly well on spot at from 1s. 7d. to 1s. 8d. per lb.

CHLORAL HYDRATE.—A further hardening in this market is recorded, and most offers for duty-paid crystals are now close up to 3s. 10d. to 4s. per lb.

CITRIC ACID, B.P. CRYSTALS.—The quotations still stand at something near 1s. 6d. to 1s. 6½d. per lb., but the market is obviously weak and business has been most disappointing both for home and export trade.

CREOSOTE (B.P.) shows no change, with dealers quoting at about 2s. 6d. per lb.

GUAIACOL CARBONATE is steady, but the market has been quiet; dealers offer from 10s. 6d. to 11s. 3d. per lb.

HEXAMINE.—Supplies are free on spot, with holders' prices steadily maintained in the region of 3s. 6d. per lb.

HYDROQUINONE is steady on a bright market at from 4s. 3d. to 4s. 9d. per lb., according to quantity.

LACTIC ACID is unchanged. B.P. on spot is offered close up to 2s. 9d. per lb.

METHYL SALICYLATE continues unsteady, with the tendency to cheaper prices. Dealers offer to-day from 1s. 11d. to 2s. 1d. per lb., according to quantity.

METHYL SULPHONAL has been slow in moving off, with dealers asking close up to 26s. per lb.

PARA-FORMALDEHYDE is still unsteady as quoted on spot at 3s. to 3s. 3d. per lb.

PARALDEHYDE is rather firmer, and there is not much on spot available below 1s. 5½d. to 1s. 6d. per lb.

PHENACETIN.—A steady tone governs this market, with dealers' prices for quantities at 6s. to 6s. 3d. per lb., and slightly more for small lots.

PHENAZONE is firm, with plenty of small business being done. Quotations on spot run from 7s. 3d. to 7s. 6d. per lb., according to quantity.

PHENOLPHTHALEIN remains dull, with the quoted rate of 6s. 6d. per lb. being shaded for good business.

POTASSIUM PERMANGANATE, B.P.—Some dealers are now asking up to 8d. per lb., in drums, for quantities; market still fairly active.

POTASSIUM SULPHOGUAIACOLATE remains dull at about 6s. per lb.

RESORCIN is rather steadier, with few offers below about 5s. 6d. to 5s. 9d. per lb.

SACCHARIN (550).—Market steady and unchanged: quoted from 62s. 9d. to 65s. per lb., according to quantity, duty paid.

SALICYLIC ACID (B.P.).—Conditions show a further weakening in the market, and at the close matters were in buyers' favour with offers from 1s. 6d. to 1s. 8d. per lb.

SODIUM BENZOATE (B.P.) is steady after last week's decline and offering on spot at 2s. 6d. per lb.

SODIUM DIETHYLBARBITURATE is seldom inquired for. It can be had at about 17s. per lb.

SODIUM SALICYLATE has a better tone this week, and there is certainly more inquiry on the market. Prices are about the same, but are steadier. B.P. crystals, 2s. 4d. to 2s. 5d. per lb.; powder, about 2s. 2d. to 2s. 3d. per lb.

TANNIC ACID.—B.P. *Levis* continues steady, with dealers offering at 2s. 11d. to 3s. per lb.

TARTARIC ACID.—The market has lost its better tone reported last week and business seems to have been much quieter again. Prices quoted are about the same at 1s. 1½d. to 1s. 1¾d. per lb., less 5 per cent. for B.P. crystals, but the market is certainly unsteady at these rates.

THYMOL.—Shortage of supplies has had the usual effect here and prices have moved up during the past few weeks very quickly. Dealers are now said to be quoting firmly at 17s. 9d. to 18s. 9d. per lb., with the market hardening to the higher rate.

VANILLIN is rather steadier after the recent fall, and offers are now at about 24s. 6d. per lb. for 100 per cent.

Industrial Chemicals, etc.

London, July 23.

In most directions the tone of the heavy chemical market keeps quite steady, and the few alterations recorded this week do not affect the general conditions. Red and white lead are dearer, while acetic acid shows a further decline. Business has been fairly good, but most of it has been for small lots.

ACETIC ACID shows a further spot reduction, with the market still rather slack. Dealers offer 80 per cent. technical at about £44 and 80 per cent. pure at £45 per ton, in barrels. 98 per cent. glacial is down to about £70 per ton, in glass demijohns, ex wharf, London.

ACETONE shows but little life at the moment, but the market is steady at about £100 per ton for B.G.S., in drums, on spot.

ALUM is steady but quiet at £10 per ton for lump, in casks. AMMONIA (ANHYDROUS) has been selling quite well, with dealers' prices well held at 1s. 5½d. to 1s. 6d. per lb. for 99.95 per cent., in loaned cylinders.

ARSENIC.—There is but little alteration in the general position, the lifeless state of the demand militating against the possibility of any upward reaction, for the present at any rate, although the undertone is a little steadier, and some inquiries have been received, with a promise of business later. White Cornish, delivered, may be called about £45 to £45 10s. a ton.

BARIUM CHLORIDE is offering on spot at about £14 per ton for 98 to 100 per cent. white crystals, but the demand is not good.

BLEACHING POWDER meets with little interest. Dealers' prices about £10 per ton for 35 to 37 per cent. chlorine.

COPPER SULPHATE.—Only a limited amount of business continues to be reported for export, and under keen competition more widely divergent terms are being asked by makers at between £24 5s. and £25 per ton, f.o.b. for casks, less 5 per cent. The market now being between seasons, there is not much improvement to be looked for in the demand.

CREAM OF TARTAR has been moving off briskly, and prices are perhaps a shade firmer, at about 84s. 6d. to 86s. per cwt., less 2½ per cent. for 99 to 100 per cent. in ton or more lots.

EPSOM SALT is offered on spot at about £5 per ton, in bags, for commercial quality, with buying far from active.

FORMALDEHYDE continues to be quoted close up to £54 to £55 per ton for 40 per cent. volume, but there is not much business doing.

GLAUBER'S SALT shows no change on the week. Spot parcels are about £3 10s. to £3 15s. per ton, in bags, for commercial quality.

LEAD ACETATE has been selling on spot in small lots, with prices about £45 for brown and £46 10s. for white.

LEAD PRODUCTS.—Importers' prices for these products have advanced with the price of the metal. Red lead and litharge, about £41 10s.; white lead, dry, £42 10s.; ground in oil, £44 10s. per ton, c.i.f. London.

LITHOPONE has been meeting with sustained business on spot, and dealers' prices are well held at £22 to £22 10s. per ton for 30 per cent. Continental red seal.

OXALIC ACID shows little life. The quoted rate is level on the week at about 4½d. per lb.

POTASH CAUSTIC has been moving on spot in small lots held by dealers, who have been obtaining about £30 per ton for 88 to 92 per cent. solid, in drums.

POTASSIUM CARBONATE is steady and fairly active. Dealers' prices show no change: 90 to 92 per cent., £23 to £23 10s.; 96 to 98 per cent., £25 to £25 10s. per ton.

POTASSIUM CHLORATE, on spot, ex store, is quoted at about 3d. per lb. For shipment from the Continent in large quantities slightly less would be taken.

POTASSIUM PERMANGANATE shows a fair turnover on the week, with dealers' prices for commercial quality about 7½d. to 7¾d. per lb., in drums.

POTASSIUM PRUSSIAN is flat, with dealers offering British at about 7½d. per lb. for yellow.

SODIUM ACETATE is quoted in the region of £24 per ton on spot.

SODIUM CHLORATE.—Dealers are quoting for shipment from the Continent at about 23d. per lb., c.i.f. London.

SODIUM HYPOSULPHITE has been in fair demand, with prices very steady. Pea crystals, in one-cwt. kegs, £14 to £14 5s. per ton; commercial quality, about £9 10s. to £9 15s. per ton, in casks.

SODIUM NITRATE.—There has been no business of consequence, and matters are likely to remain flat for some weeks. Quotations are unchanged: 96 per cent., £13 2s. 6d.; refined, £13 5s., f.o.r. London, July-August; Liverpool, 96 per cent., £13; refined, £13 2s. 6d. per ton.

SODIUM NITRITE has sustained a further fall in value and is now quoted down to £25 10s. per ton on an idle market.

SODIUM PRUSSIAN is still meeting with but little business, with dealers offering British material at about 4½d. per lb.

SODIUM SULPHIDE is seldom called for and prices are unchanged. 60 to 62 per cent. solid, £14; ditto, broken, £15 5s. per ton, in drums.

SULPHUR.—A moderate demand is reported, and the terms wanted stand at £5 15s. to £6 per ton for raw American or Sicilian, while refined is called £9 12s. 6d. to £9 15s. for Sicilian flowers and £7 15s. for roll, delivered ex wharf London.

ZINC PRODUCTS.—The tendency of most zinc-products is towards firmness, despite the rather subdued state of business. There is continued keen competition from Holland and Belgium in zinc-oxides, but home makers maintain their terms, ranging from about £37 to £45 a ton, f.o.r., according to quality, but considerably over the higher figure is quoted in some quarters for B.P. Zinc dust varies from about £40 to £47 10s., and zinc ashes range upward of £14 10s. a ton, based on 70 per cent.

COAL-TAR PRODUCTS, ETC.—Despite the rather marked lack of good business, the general tone of this market keeps fairly steady. Creosote oil shows a further big drop in values and pitch remains neglected. Other items are unchanged. ANILINE OIL continues to be quoted by British makers at 7½d. to 9d. per lb., naked, ex works. ANILINE SALT shows no change as quoted by British makers at 7½d. to 8½d. per lb., naked, ex works. BETANAPHTHOL is steady on a quiet market at 1s. 1d. to 1s. 2d. per lb. TOLUOL: pure, 1s. 8d. to 1s. 10d.; 90's, about 1s. 5½d. per gallon. Market quiet. XYLOL: pure, 3s. 3d.; commercial, 2s. 3d. per gallon. Dealers are quoting at about these figures. CREOSOTE OIL shows a big drop, and is still rather unsteady on a dull market. Quoted at about 6½d. ex works, and about 7d. per gallon f.o.b. for large quantities only. CARBOLIC ACID crystals are steady but quiet as quoted at about 6½d. to 6¾d. per lb. for 39° to 40° C., in large-bulk packing. CRESYLIC ACID continues to be inquired for, with the price fully maintained at 2s. 1d. to 2s. 2d. per gallon. NAPHTHALENE keeps steady on a dull market, from £16 10s. to £17 per ton, London. PYRIDINE remains slack, with prices quoted at 19s. to 20s. per gallon. Market unsteady. HEXAMETHYLENE is seldom inquired for; dealers quote close up to 3s. 8d. to 3s. 9d. per gallon. Pure METHYL ALCOHOL remains slow of sale, with dealers offering in London at about £80 per ton, in drums, ex wharf. PITCH: Actual business is still lacking, but some few inquiries have been received for forward delivery. The price quoted is still nominal, at about 55s. per ton, f.o.b. East Coast. WOOD TAR is quoted at £5 per ton.

Fixed Oils, etc.

MOST items have had quite a fair week and prices are well maintained in the more important products. Linseed oil and American turpentine are firm. Castor is dearer, coconut, cotton and palm oils close firm. ACID OILS.—Prices for some kinds are lower, but the market closes steady. Coconut and palm kernel, 41s. 6d.; groundnut, 37s. 6d.; soya, 33s. 6d., all spot. CASTOR.—Prices are higher and the market closes firm. Pharmaceutical, 73s.; first pressing, 68s.; second pressing, 66s., in barrels, all spot, in not less than one-ton lots; Madras, 62s. 6d., c.i.f. COCONUT.—The market is firm and prices show little change on the week. Deodorised, spot, 50s.; Ceylon, 44s. 3d., c.i.f.; Cochin, 58s., c.i.f. COTTON.—There is a better tone and prices are rather firmer at the close. Deodorised, 52s.; common edible, 50s.; soap-making, 46s.; crude, 42s. 6d., all spot. GROUNDNUT.—Market still dull and values level on the week. Deodorised, on spot, 52s.; crude Oriental, 48s., c.i.f. LINSEED (RAW, NAKED) has attracted fair business, and at the close was quite active at dearer rates for all positions. On spot, 41s. 3d.; July, 40s.; July-August, 40s. 3d.; September-December, 39s. 10d.; January-April, 38s. 10d. Hull: On spot, 39s. 9d.; July, 39s. 9d.; July-August, 39s. 9d.; September-December, 39s. 9d.; January-April, 38s. 10d. PALM KERNEL.—A further slight fall in values is recorded, but the market is now fairly steady. Deodorised, 49s.; crude, 44s. 6d., all spot. PALM.—Spot values are fully maintained, and some grades show a slight advance; market closes firm. Lagos, 39s.; softs, 39s.; mediums, 39s.; hards, 39s. 3d.; bleached, 41s. 6d., all spot. RAPE.—A steady but quiet market and values unchanged. Refined, 51s.; crude, 48s., all spot. SOYA.—Values are rather easier this week and business has been slow. Deodorised, 52s.; crude, 42s. 6d., all spot. TURPENTINE (AMERICAN).—A fair volume of business has been done, and the tone of the market at the close was firm at slightly higher rates. Total London stocks on July 19 was 9,100 barrels of American spirit. On spot, 64s. 9d.; July-December, 65s. 9d. The receipts at American points continue to be well taken up under a steady demand from dealers. Deliveries here last week were 1,737 barrels against landings of 3,357 barrels, making stocks 9,117 barrels, the visible supply being 21,974 barrels. WOOD.—Hankow, in barrels, shows a big jump and closes firm at 78s. on spot.

LUBRICATING, MINERAL AND BURNING OILS.—This market keeps steady, with business restricted. There is no material change to record. BENZOL.—There is no change in British makers' prices, with which dealers are keenly competing. Market quiet; crude 65s. 10d. to 1s.; standard motor, about 1s. 6d.; pure, 1s. 8d. to 1s. 10d. per gallon, ex works, in tank wagons; f.o.b. prices, including free drums, about 6d. per gallon more. FUEL OIL.—950 gravity. £4 7s. 6d.; 890 gravity, £5 7s. 6d. per ton, ex tank; market keeps steady but quiet. PARAFFIN WAX AND SCALE.—The wax market is steady at level rates at 3d. to 5d. per lb., according to melting point, in bags. Scale is offering c.i.f. U.K. ports at about 25s. 6d. per cwt., according to quality. SOLVENT NAPHTHAS.—A week of good business is reported, with prices fully maintained; 90/160, 1s. 3d.; heavy, 90/190, about 1s. 2d. per gallon. PARAFFIN OILS.—Market firm with business satisfactory; American standard white, 1s. 1d.; water white, 1s. 2d. per gallon, barrels free. Russian prime white kerosene keeps well up to recent rates with some enquiry; 6d. to 7d., ex tank; buyers' barrels filled free. 7d.; 10d. per gallon, barrels free, ex wharf, London. PETROLEUM JELLIES.—Prices are steadily maintained, with a limited business being done. White to snow white, £64 to £69; amber and yellow, £25 to £28; red vet, £22; dark stiff green, about £19 10s. per ton, ex wharf, London. WHITE OILS.—Market still quiet; no further change in values. Special No. 1, £42; No. 1, £36; No. 3, half-white, £28; No. 4, half-white, £20 per ton; drums and barrels free, ex wharf, London. LUBRICATING OILS.—The market has been rather quiet again this week, but prices are about the same. Conditions for shipment are also unchanged. On spot, pales, £14 to £27; reds, £15 to £28; dark cylinders, £17 10s. to £37; filtered cylinders, £23 15s. to £43 per ton, ex wharf, London, less 2½ per cent. SOLUBLE OIL, £29 per ton, net. No. 1 RUSSIAN OIL is steady and active at £19 15s. per ton, less 2½ per cent., ex wharf, London.

London Drug Auctions

Commercial Sale Rooms,
Mincing Lane, E.C.3 July 24.

THE auctions were resumed after an interval of eight weeks, when moderate supplies were offered. The demand, however, was extremely poor, and it was mostly a matter of recording prices in the catalogues, the auction being concluded by 12.45 p.m. The principal demand was for rhubarb, which as regards rough round High-dried sold at rather

lower prices. Matto Grosso ipecacuanha sold cheaply for water-damaged, no sound being disposed of. Native-Jamaica sarsaparilla was steady for the lower qualities, but good red failed to sell. Beeswax sold at firm prices for East African. Honey was flat, and only a few oddments were disposed of. The following table shows the quantity of goods offered and sold, the asterisk denoting private sales:—

	Offered.	Sale.		Offered.	Sale.
Aconite root	35 ..	0	Illipe nuts	14 ..	0
Agar agar	5 ..	5*	Insect powder		
Albumen	10 ..	2	(kgs.)	8 ..	0
Aloes—			Ipecacuanha—		
Cape ..	53 ..	1*	Cartagena	9 ..	0
Socotrine	6 ..	0	Matto Grosso	54 ..	10
Zanzibar	2 ..	0	Minas	5 ..	0
Ammoniacum (cs.)	16 ..	0	Jaborandi leaves	29 ..	2
Anise (Russ.)	111 ..	0	Jalap	10 ..	0
Anise star	3 ..	0	Jalap powder	21 ..	0
Annatto seed	130 ..	0	Janbul seed	15 ..	0
Asafetida	93 ..	0	Kino (Afr.)	27 ..	0
Belladonna root	21 ..	0	Kola	40 ..	8
Benzoin—			Lavender flow.	10 ..	0
Palembang	5 ..	0	Line juice (pns.)	10 ..	0
Siam	37 ..	0	Liquorice root	68 ..	0
Sumatra	186 ..	3	Lobelia herb	7 ..	7
Buchu	82 ..	3	Myrrh	166 ..	0
Calumba	100 ..	0	Nux vomica	70 ..	0
Camphor cr.	100 ..	0	Olibanum	161 ..	0
Camphor oil	5 ..	0	Orange peel	53 ..	2
Cannab. Ind.—			Palmarosa oil		
African	20 ..	0	(pot)	1 ..	0
Cardamoms	415 ..	20	Patchouli oil	17 ..	0
Cascarilla	7 ..	4*	Podophyllum root	20 ..	0
Cassia	(cs.) 200 ..	200	Quillaia	40 ..	0
Cashew nuts	26 ..	0	Rhapontica root	46 ..	0
Cassia fistula	69 ..	0	Rhubarb (Ch.)	114 ..	26
Chamomiles	17 ..	0	Rose petals	5 ..	0
Chillies	203 ..	0	Sage leaves	72 ..	0
Chiretta	9 ..	0	Sandalwood chips	25 ..	0
Cinchona	103 ..	3	Sarsaparilla—		
Citronella oil (Jv.)			Grey Jamaica	35 ..	0
(drum) ..	1 ..	0	Honduras	2 ..	0
Cochineal	8 ..	0	Lima-Jamaica	11 ..	0
Coriander seed	170 ..	0	Mexican	39 ..	0
Croton seed	13 ..	0	Native Jam.	33 ..	14
Cubebs	83 ..	0	Seedlac	10 ..	0
Cus cus root	18 ..	0	Senna and pods—		
Cuttlefish bone	247 ..	0	Alex.	199 ..	3
Dragon's blood	73 ..	0	Mecca	15 ..	0
Elemi	(cs.) 55 ..	4	Tinnevely	346 ..	22
Elm bark	14 ..	0	Sloes, dried	40 ..	0
Ergot	25 ..	0	Soy (Jp.)	4 ..	0
Eucalyptus oil	42 ..	32*	Squill	12 ..	0
Euphorbia pil.	9 ..	0	Strophanthus	8 ..	0
Fennel seed	50 ..	0	Tamarinds (Cal.)	45 ..	0
Galangal	37 ..	0	Tonka beans	3 ..	2
Gamboge	24 ..	0	Tragacanth	60 ..	0
Guajacum	18 ..	2	Turnerie	139 ..	20*
Gum acacia	10 ..	0	Turtle, dried	1 ..	1
Gurjun oil	61 ..	0	Wax (bees)—		
Henna leaves	139 ..	0	East African	132 ..	10
Henna powder	2 ..	0	East Indian	60 ..	9*
Honey—			Jamaica	13 ..	11
Calif.	19 ..	0	Morocco	16 ..	0
Chilian	25 ..	0	Portuguese	22 ..	0
Cuban	35 ..	0	Smyrna	5 ..	0
Hawaiian	40 ..	0	Spanish	28 ..	0
Jamaica	695 ..	29	Wax, Carnauba	20 ..	0
New Zealand	40 ..	39	Wormseed (hgs.)	2 ..	0
San Domingo	68 ..	0			
St. Lucia	7 ..	0			

AGAR-AGAR.—Five bales Kobe No. 1 strip were offered, but had been sold privately.

ALBUMEN.—Two cases egg from Oporto sold at 3s. 7d. per lb.

ALOES.—No Cape firsts offered; for good seconds slightly cindery, 41s. was wanted, and 35s. to 36s. for ordinary seconds.

AMMONIACUM.—Three bags fair small to medium tear were limited at 10d. per lb., at which private business has been done.

BELLADONNA ROOT.—Ten bags Indian testing 0.73 per cent. were bought in at 6d. per lb., and for 12 bales testing 0.49 per cent., 52s. 6d. per cwt. was the limit.

BENZOL.—The only sale consisted of three cases fair Sumatra seconds, with small to bold almonds at £7 5s. per cwt. Good fair seconds were held at £8 10s., and good very barkly thirds at £5 17s. 6d. per cwt.; for Palembang thirds 55s. was asked.

BUCHU was in large supply; good green round, free from stalk, was held for 3s. 2d. per lb., and a bale of middling round sold at 2s. 8d. A bale of good green, slightly stalky, long-ovals, realised 2s. 7d. per lb. subject, and a bid of 2s. 4d. is to be made for six bags of bronzy ovals. Longs were limited at from 2s. 6d. to 2s. 8d.

CALUMBA was represented by 100 bags only, comprising small to medium fair brown natural sorts, for which 10s. per cwt. was wanted.

CAMPOR (CRUDE).—A lot of 100 cases Chinese, testing 95.5 per cent. and 89.5 per cent. camphor, was bought in at 2s. 7d. per lb.

CAMPOR OIL.—Five drums were limited at 57s. 6d. per cwt., at which business has been done privately.

CARDAMOMS were flat, only 20 cases being disposed of (including private sales of catalogued lots), including medium pale Ceylon-Mysore at 5s. 5d. per lb., medium and small pale at 4s. 9d., small pale 3s. 6d. to 4s. Ten cases decorticated seed had been sold privately; two packages sold at from 5s. 3d. to 5s. 9d. per lb.

CASEIN.—A parcel of 208 cases (10 tons) from Braila offered and sold for account of whom it may concern, at £24 per ton.

CASHEW NUTS.—A lot of 26 cases screened from Bombay was retired at 50s. per cwt.

CHAMOMILES.—Six bales dull brownish Belgian were offered and held for 180s. per cwt.

CHILLIES.—A lot of 17 bags Nyasaland of fair bright quality, offered and bought in at 50s., and for 186 bags Japanese 125s. to 140s. per cwt. was wanted.

CINCHONA.—Three bales flat Cartagena sold without reserve on underwriters' account at 1½d. per lb. for sea-damaged, part badly.

CORIANDER SEED.—A lot of 170 bags fair Morocco was offered and bought in at 25s. See also "Seeds."

CROTON SEED.—A parcel of 13 bags fair bright Ceylon of recent import, was bought in at 40s. per cwt.; a sporting bid of 30s. was noted by the broker.

CUTTLEFISH BONE.—The offerings included 101 bags small to bold good palish East Indian sorts, which were bought in at 1s. per lb.

ELEMI.—Four cases good pale Manilla firsts sold at 67s. per cwt.

ERGOT.—The offerings comprised 13 bags fair sound Spanish, which were bought in at 1s. 2d. per lb.; five bags small sound Portuguese were also bought in at 1s. 2d.

EUCALYPTUS OIL was represented by 42 cases from Australia, of which 32 cases had been sold privately; 2s. per lb. was asked for B.P. quality.

GUAIACUM.—Two cases fair glassy block sold at 1s. per lb.

GURJUN OIL.—A lot of 50 drums was catalogued, of which ten offered and held for 10d. per lb.

HONEY was flat, sales being quite retail, including the following:—Six barrels Jamaica cream set at 55s.; six barrels pale set at 53s.; five barrels pale amber liquid at 57s., and seven barrels dark amber liquid at 42s. 6d. to 45s. Of New Zealand, 39 cases dullish pale set sold at 70s. per cwt.

ILLIPE NUTS.—A parcel of 14 bags, part wormy, lying at a private warehouse, offered, but no bid was made.

INSECT POWDER.—A lot of 8 kegs, lying at a private warehouse, consisting of 50 per cent. ground from cultivated closed flowers, and 50 per cent. from stems, were bought in at 1s. 8d. per lb.

IPECACUANHA.—Buyers' wants were filled by the sale of 10 bales slightly water-damaged Matto Grosso, which realised from 7s. 4d. to 7s. 10d. (one lot 7s. 1d.), being cheap. Fair bright sound Matto Grosso was obtainable at 8s. 3d. to 8s. 6d. per lb., and for five bales good Minas 8s. 3d. was wanted. Of Cartagena a new lot of nine bales offered, but no price was mentioned. The "Port Caroline," from Monte Video, has brought 23 bales ipecacuanha.

JABORANDI LEAVES.—A lot of two bales small from Parnahyba, sold without reserve at 2d. per lb.

KOLA.—Fair Ceylon halves were limited at 3d. per lb.; eight bags ordinary small broken sold at 1½d. per lb., subject to approval.

LOBELIA HERB.—Seven bales sea-damaged sold without reserve at from 9d. to 10½d. per lb.

MANDRAKE ROOT.—Twenty bags of fair were held at 85s. per cwt.

JALAP.—Ten bags Mexican, testing 8.7 per cent. resin, of which no sample was shown, were offered and bought in at 1s. 5d. per lb.

KINO.—A lot of 25 cases inferior dusty African, lying in Liverpool, offered and held at 1s. 11d. per lb.

LIQUORICE ROOT.—A lot of 18 bags fine decorticated Anatolian was offered and held at 60s. per cwt.; the bid was 50s.

NUX VOMICA.—A lot of 76 pockets good bright Madras was retired at 13s. per cwt.

PATCHOULI OIL.—Six cases from Seychelles, of good aroma, were offered and bought in at 12s. 6d. per lb., and ten drums from Singapore were also bought in at 12s. 6d. per lb.

ROSE PETALS.—Five bags fair were taken out at 1s. 2d. per lb.

RHUBARB was practically the only drug for which there was any demand, with round rough High-dried selling at lower prices. Of this description 18 cases sold at from 1s.

to 1s. 1d. per lb. for small to bold rough round, with two-thirds greyish pinky and one-third dark fracture, being cheaper. Of Canton, six cases sold without reserve, comprising bold round, three-quarters fair pinky fracture, one-quarter grey at 2s. 6d. per lb.; medium round ditto at 2s. 4d., and common small round, with two-thirds greyish fracture, and one-third dull pinky at 2s. per lb. Towards the close of the sale two cases medium round Shensi, with three-quarters fair pinky fracture, sold at 3s. per lb. subject. Bold flat Shensi, with three-quarters good pinky fracture, was limited at 3s. 6d.

SARSAPARILLA.—Of Native-Jamaica, fourteen bales sold at 1s. 6d. to 1s. 7d. per lb. for mostly dull red and yellow mixed. Good red was held for 1s. 8d., and fair red at 1s. 7d. No grey Jamaica sold, good fibrous being held for 2s. 2d., buyers bidding 1s. 11d. Lima-Jamaica was limited at 1s. 6d., a bid of 1d. less being refused. Mexican was bought in at 1s. 2d., and for crown Honduras 3s. was wanted.

SENNA.—Of Tinnevely leaf six bales medium to bold greenish part specky sold at 7d. per lb. Four bales of darkish pods realised 8d. per lb.; sales privately have been made at 9d. Of Alexandrian leaf three bales of fair broken greenish realised 9d. per lb.

STROPHANTHUS.—A parcel of 8 cases brown *Hispidus*, lying in Liverpool, were offered and held for 11d. per lb.

WAX, BEES.—Small sales were made at firm prices comprising ten bags fair East African block of mixed colours at £6 12s. 6d. per cwt. Of Jamaica 11 packages sold at from £7 10s. (one lot) to £8 per cwt. for ordinary brown to fair red and brown block, these prices being steady. Fair yellow Smyrna block was taken out at £7 5s. per cwt. Nine cases dull bleached Calcutta had been sold privately.

TURMERIC.—Ten bags fair Madras finger offered, and were bought in at 70s. per cwt. A further 20 bags had been sold privately.

TURTLE.—A case of dried sold at 8s. 1d. per lb.

Java Opium Monopoly

IN the Java Budget for 1925 the expenditure on the manufacture of opium is given at 3,474,300 florins, compared with 1,808,300 in 1924. This is due to the fact that in consequence of the very considerable decline in the sale of opium existing stocks practically sufficed to meet requirements during the past year, only 300 cases of crude opium being purchased. However, in view of the necessity of acquiring a stock of raw material, including 800 cases of raw opium, provision is to be made for increased expenditure. Since the factory supplies prepared opium to the Opium Monopoly at cost price, the receipts should equal the cost of manufacture, which figures at 4,524,100 florins in the Budget for 1925. The decline in the consumption of opium during the Budget year 1924 is apparent from the fact that the amount allowed for the cost of production by the Budget of 1924 was 4,905,300 florins.

Persian Opium Production

REPORTS from Persia state that during the fiscal year 1923/1924 the production of opium showed a very considerable increase over the previous year. The yield in the province of Chorasán, the chief centre of production, amounted to 35,200,000 muscals, as compared with 1,600,000 muscals in 1922/1923, while the yield in the province of Shirás aggregated 30,900,000 muscals. During the first five months of the past fiscal year, which closed on March 20, the total stocks of opium deposited in the Government warehouses aggregated 111,266,000 muscals, against 76,000,000 muscals in the same period of the preceding fiscal year. Whereas in 1913/1914 Persia exported 770,516 lb. of opium, in 1921/1922 exports had declined to 255,697 lb.

Canadian Honey

THE production of honey is organised to a very efficient stage in Quebec, and illustrates the value of a certain amount of co-operation in industry. 3,500,000 lb. of extracted honey and 300,000 of comb honey are produced annually in the Province. The Bee-Keepers' Co-operation Association of Quebec is now amalgamated with the Co-operative Fédérée de Quebec, and sell their products through the latter organisation; part of the revenue of the Association is devoted to advertising honey and to stimulating its consumption. The grading of the honey is arranged in such a way as to place each quality in a different category. There are four grades: No. 1 quality, No. 2 quality, clear, amber and brown. According to the "Agricultural Gazette of Canada," the Association also adopted uniform packages for the domestic trade, and those who purchased honey in lithograph pails bearing the mark of the "Fédération Apicole de Quebec" are sure of having a good product. The regulations of the Association provide for a publicity fund.



Letters for this section should be written on one side of the paper only. Correspondents may adopt an assumed name for purposes of publication, but must in all cases furnish their real name and address to the Editor.

Belgian Anti-speciality Campaign

SIR,—In reference to the article (*C. & D.*, July 19, p. 98), we think the Belgian public is misinformed as to the attitude of British manufacturers. The writer has spent many months in Belgium during the last four years, and from conversations with a number of English firms he knows that in many instances they have made very serious sacrifices in order to keep their articles at a reasonable price when the Belgian franc depreciated in value. The Koko Maricopas Co., Ltd., had a very good business in Belgium before the war, and when they found the franc falling to half value they started to manufacture in Brussels in order that their article might reach the public at a reasonable price. When the franc went to 80 and 100 to the £, they found that their article was being exported from Belgium to Holland, India and the East at a great loss to themselves; hence it was necessary to close down their Brussels business and resume shipments from England. This meant doubling the price of Koko to the public in Belgium. We know that many other English firms have suffered in a like manner, and the losses must total thousands of pounds. It is therefore hardly fair to blame the manufacturers for high prices. Also we might point out that many British and American proprietary articles can be bought in Brussels shops at less than the wholesale prices here, and yet we have never met the Belgian chemist who sells at a loss; in fact, they require and get the same terms as the retailer here.

Yours faithfully,

VICTOR R. WILLIAMS.

16 Bevis Marks, London, E.C.3.

"Known to the Vendor"

SIR,—Your reply to "Senex" (*C. & D.*, July 19, p. 109) regarding the phrase "known to vendor" shows us to be in rather a precarious position in this matter. In these days businesses are tending to be carried on more than ever before on the cash system, and many customers who deal with us regularly may be known to us by sight, although we may never know their names or where they live. Personally I should not hesitate to consider a person who was in the habit of coming to my pharmacy as one who is "known to the vendor." I think that most pharmacists would also consider this as sufficient, but according to the first judgment you quote, in the eyes of some magistrates this is not always enough. If this ruling is to hold good, it would appear that a customer has to be almost a personal friend before one can supply him with substances in Part I of the Schedule, and if this were actually so it would really mean that to all intents and purposes the sale of these poisons would be prohibited altogether. Indeed, I think that this is the position we are gradually coming to, for many pharmacists now will not undertake the responsibility of the sale of a few pennyworth of these items in consequence of the risk incurred.

Yours faithfully,

COGNOTUM (19/7).

The Proprietary Articles Trade Association

SIR,—The report of the annual general meeting of the Proprietary Articles Trade Association (*C. & D.*, July 19, p. 88), shows the executive to be very well satisfied with the work of the year, the only complaint being that there are still some 2,500 retailers who do not subscribe as they should do. As one whose experience goes far enough back to remember the days of keen cutting of the prices of proprietary lines, I appreciate the fact that the P.A.T.A. prices are respected to-day by pharmacists generally, and

by company shops carrying on chemists' business as well, the chief offenders nowadays being market stall holders and street traders. What the present-day pharmacist, who does not remember the position in the past, cannot understand is, how these traders manage to obtain their supplies. If one sends a substantial complaint to the P.A.T.A. with full details the vendor still goes on displaying the goods at cut prices, but if the pharmacist who complains says that he will be compelled to meet the competition he is threatened immediately with a stop notice. How is it that the pharmacist's supplies can be stopp'd whilst the street trader's cannot? The evidence and identification marks of goods are the same in both cases.

Yours faithfully,

A. MEMBER (21/7).

Judicious Salesmanship

SIR,—In a report that I have seen on a new business training course, a point is made that retailers other than pharmacists offer their customers high-priced articles with a view of increasing sales. I know that this is done from experience; wishing to purchase a small quantity of envelopes, I went to my usual shop, and the salesman produced a 5s. box of stationery, which he badgered me (there is no other term to express it) to buy. Result, I go to his shop no more. Although I did not buy his 5s. article, there are many persons who would do so sooner than have an argument, or through a paltry fear of looking small or impecunious; but when these persons reach home and realise what they have spent, they are extremely annoyed, and the final result is bad for the seller. Salesmanship, therefore, can be overdone, although one naturally does not wish to confine one's sales to twopenny-worths. A better way, in my experience, is to produce two or three sizes of the article, if such are available, and point out the saving entailed by the purchase of a larger quantity; if the customer is a regular consumer, a sale of the largest is nearly always effected, whereas if he only requires sufficient for one occasion it is useless to overload him with goods which he will only waste. Where there are two or more qualities of an article, it should be easy for a pharmacist, especially with drugs, to point out the advantages of the better quality.

Yours, etc.,

SELLER (12/7).

Legal Queries

Perplexed (14/7).—Permission for a factory owner to have cocaine eye-drops in his possession is given in order that he may comply with the Factory Act Order. Circumstances are conceivable where the custodian uses the eye-drops in first-aid treatment to a person who was on the premises but not an employee. There appears to be nothing illegal for you to perform the same office under similar conditions. You are neither selling nor parting with the cocaine nor doing anything capable of leading to abuse, but using the drops to relieve pain in an injured eye. The Home Office has not yet descended to the depths of prohibiting such an act of charity.

J. R. W. (15/7).—In march last "J. R. W." gave instructions to a firm of auctioneers in Dublin to give a chest of drawers to a certain named firm of carriers to be collected, packed, and forwarded to London. The carriers collected the article on March 27, and delivered it on April 3 for transmission carriage paid to the L.M. & S. Railway, but it has not yet come to hand, although frequent inquiries have been made for it. The carriers now send in a bill for 30s. in respect of the collecting, packing and forwarding, and "J. R. W." asks if he should pay this money; and, further, can he make a claim, and, if so, against whom? [If this charge is a reasonable one, "J. R. W." must pay for it; and he himself can claim against the railway company for the loss caused to him by their failure to carry and deliver the article to him according to their contract. His claim against the railway would, of course, include the sum paid by him to the forwarding agents.]

D D

Miscellaneous Inquiries

When samples are sent particulars should be supplied to us as to their origin, what they are, what they are used for and how. We do not undertake to analyse and report upon proprietary articles nor to publish supposed formulas for them.

W. J. R. (30/6).—When we issue the book on "Pharmaceutical Botany," reprinted from the series of articles in the *C. & D.*, it will not be possible, on account of the excuse, to include the *C. & D.* Nature Pictures in the book. It is therefore advisable for students to obtain the set of Nature Pictures while they are on offer, as the supply is limited.

F. M. (30/6).—IMPORTING SALVARSAN.—There is at present no restriction on the importation of salvarsan and its substitutes other than the Customs duty as a fine chemical. The Therapeutic Substances Bill proposes to make it necessary to be licensed to import these substances.

C. S. & Co. (30/6).—SYR. GLYCEROPHOSPH. CO. of the British Pharmaceutical Codex is founded on the formula of Dr. Robin and is now generally adopted. The compound syrup is sent out of a red colour, and although Robin ordered syrup of cherries, cudbear is used in the B.P.C. formula as being more stable.

J. C. (241/28).—STUDENTS' CORNER.—The articles for students on chemical analysis, botany and the British Pharmacopœia which we publish in the *C. & D.*, are of a kind not obtainable in text-books. There are excellent text-books for students of materia medica, such as those by Drs. H. G. Greenish and Southall, and the commercial side is being dealt with in the *C. & D.* Commercial Compendium.

G. & K. (1/7).—LIQUID DRY SHAMPOO.—See *C. & D.*, May 31, p. 782.

Wulfruna (3/7).—FIRE EXTINGUISHERS.—The best form for the house is that which generates carbon dioxide by bringing acid in contact with sodium bicarbonate, and by this means forcibly expels water from a cylinder. Syphons of aerated water form a useful fire extinguisher, but buckets of plain water and sand are often kept for the purpose in commercial offices.

J. J. D. C. (3/7).—PRICE OF BUSINESS.—An "all in" price can never be given for a business unless full details are given on which to form an opinion. In your letter the only positive information is the amount of the stock-in-trade and reference to the fixtures, but without an estimate of the value. The method of arriving at a figure for the business may be stated as follows: Stock, plus fixtures, value of lease (if any), and five years' value of your net profits—i.e., the profit after paying all expenses and the portion appropriated to you for your living expenses. The profit in this case will be about 10 per cent. of the figure you state.

C. B. (3/7).—DENATURANT FOR SPIRITUOUS HAIR WASH.—The Excise authorities accept as a denaturant of industrial spirit for hair washes dry extract of quassia 1 oz., saponin 2 dr. for three gallons of spirit, and more readily if other substances such as resorcin are present, which are in the nature of additional denaturants. Some examples of formulas which have been passed were given in the *C. & D.*, April 28, 1923, p. 583.

M. J. F. (4/7).—BLEACHING SPONGES.—Since we replied to your inquiry (*C. & D.*, June 14, p. 850) we have conducted further experiments as to the best sponge-bleaching process. We find that the best way to bleach sponges is first to wash them well, then soak them in a solution of potassium permanganate (about 1 in 1,000) for a few minutes, again wash and pass them through sulphurous acid, finally washing and drying. The degree of bleaching is determined by the length of time the sponges are left in the permanganate, and if variation is required this time should be reduced and repeated if it is found necessary afterwards.

S. W. (5/7).—The prices in the *C. & D.* Retail Price List refer to fluid ounces of all liquid medicaments. Allowance is made for varying specific gravity.

H. J. H. (7/7).—CLEANING CREPE RUBBER.—Sponging with petrol or benzene is probably the quickest method of cleaning soiled crepe rubber. If the use of an inflammable or solvent liquid is not desired, warm soap and water may be tried.

W. H. (7/7).—(1) METHYLATED LINIMENTS.—Mineralised spirit may be used for methylated liniments in the same way as industrial spirit, but the odour and colour of the products will differ from those purchased, and this may raise questions with customers. (2) Picric acid, 10 per cent., in methylated spirit with pyridine and the mineral naphtha as denaturants, dissolves the acid and then becomes flocculent; this does not happen with industrial spirit. There appears to be some reaction either with the pyridine or the mineral naphtha. We have not noticed this before. On dilution of the solution with water, when made with mineralised spirit, the solution yields a turbid solution owing to presence of the mineral naphtha. The alcoholic solution usually employed is always made with industrial spirit.

J. H. (7/7).—PILE OINTMENT.—The formula for which you inquire is as follows:—

Powdered boric acid	...	...	22 oz.
Powdered galls	...	...	7 lb.
Powdered opium	...	...	22½ oz.
Distilled witch hazel extract	...	...	60 oz.
Origanum oil	...	...	7½ oz.
Lanolin	...	...	17½ lb.
Soft paraffin	...	...	27½ lb.
Hard paraffin	...	...	2 lb.

J. C. C. (7/7).—A sample of urine is not much guide to the health conditions of a patient unless other factors are considered or there is a marked deviation of a typical kind from the normal. Judging by the analysis you enclose, it appears that the patient suffers from debility, probably with depression. If this does not seem to explain the condition, it will be necessary to have periodic samples taken covering the twenty-four hours, and in this case preferably specimens obtained through a catheter.

S. & H. (8/7).—LAVENDER WATER BASIS.—Iso-propyl alcohol is used in place of alcohol in the manufacture of lavender water, but as a rule only part of the alcohol is replaced by iso-propyl alcohol—equal parts is often employed. The other ingredients of the lavender water are the same.

H. S. (9/7).—We require the reference number of the "known, admitted and approved" remedy, so that we can find the formula.

Retrospect of Fifty Years Ago

Reprinted from
"The Chemist and Druggist," July 15, 1874

The Comet

The beautiful visitor from the unknown regions of space which is now careering through our planetary system affords to astronomers the first really promising occasion of investigation of cometary nature by means of the spectroscope. Mr. Norman Lockyer writes an article in last week's "Nature," in which he remarks that the comets of 1853 and 1861 came in prespectroscopic days. Those which have appeared since have hardly been brilliant enough to give any definite results. Mr. Lockyer sums up how much, or rather how little, is known of the chemical composition of these bodies, and he shows, too, that spectroscopic observations are not so perfectly certain, at least in their negative results, as is sometimes assumed. It is now conceded that a different molecular arrangement of the same element may produce different spectra. Observers of recent comets have not been able to agree on the position of the lines in such spectra as they have obtained. Mr. Lockyer himself speculates, on necessarily slender bases, that the nucleus of a comet is incandescent, but of low temperature. This supposes a different condition of physical effects to that to which we are accustomed, but the speculation is itself an indication of the elementary state of our knowledge on the subject, and shows, too, how rich in scientific results an inquiry into the nature of comets may prove to be.



[Commenced C. & D., July 5, 1924]

Acetyl Value.—Term used in connection with the analytical valuation of fats and waxes. The acetyl value or acetyl number indicates the number of milligrams of potassium hydrate required for the neutralisation of the acetic acid obtained on saponifying one gram of an acetylated fat, or wax.

Acid Value.—Term used in connection with the analytical valuation of fats or waxes. It indicates the number of milligrams of potassium hydrate required to saturate the free fatty acid in one gram of a fat or wax. The acid value is a measure of the free fatty acids in a fat or wax, and is an indication of quality as the proportion of free acids increase with age.

Acids, Accidents with.—When accidents happen with acids in the pharmacy and warehouse, all traces of acid should be washed away at once from the skin with plenty of water, which has been made alkaline with liq. potassæ or sod. bicarb. Mag. carb. made into a thick cream with water should then be laid on the part, and if a large extent of skin is involved a doctor sent for. The same treatment with weak alkaline solutions applies to splashes of acid in the eye, and should be followed by the instillation of almond or olive oil, or liquid paraffin. The inhalation of the fumes of nitric acid in a confined space is particularly dangerous, and several fatal accidents have been caused in pharmaceutical premises by breathing nitric oxide in the air from broken containers of nitric acid. In such a case the mouth and nose should be covered with a wet towel and the acid on the floor copiously diluted with water, but it is not advisable to remain in the atmosphere longer than necessary. The burns arising from contact with the skin with hydrofluoric acid are difficult to heal, and are dangerous if a considerable area of skin is involved.

Acids; Carriage of.—Mineral acids, such as hydrochloric, nitric and sulphuric acids will only be carried by railway and steamship companies and other carriers under special conditions; they are subject to a high minimum charge for carriage, and can only be delivered at the railway terminus or wharf of shipment on certain days and certain hours. Parcel carriers will not carry acids, ethers, etc., on any terms. Nitric and sulphuric acids must be packed in cases and with kieselguhr or other material on which the acid has no chemical action, nor may the two acids be packed in one case or with other chemicals. Hydrochloric acid per rail can be sent either in cases or hampers, and packed with straw or sawdust. Senders are liable to a penalty of £20 unless the nature of the contents is declared and distinctly marked on the outside of the package.

Aconite Poisoning Antidotes.—In case of poisoning by aconite or aconitine or their preparations, the patient should be kept in a recumbent position, and warmth applied to the body and feet. The stomach should be washed out, but emetics should not be used. Tannic acid as a precipitant of alkaloid and charcoal should be administered. As a stimulant for secondary treatment, spt. ammon. aromat. 5ss, well diluted in water, should be given, and for the heart tinct. digitalis rxv., and also brandy well diluted *per rectum* if necessary. Atropin. sulph. 1/50 gr. may be given hypodermically.

Aconite, Sale of.—Aconite is included specifically in Part I of the Poisons Schedule of the Poisons and Pharmacy Act, 1908, on account of the very poisonous nature of the alkaloid aconitine which it contains. The exact meaning of "aconite" is not known for certain. If

taken as the English name for *Aconitum Napellus*, both the leaves and root are included, but it probably includes all kinds of aconite, official and otherwise. Veterinary medicines containing powdered aconite leaves can only be sold under the condition of Part I of the Poisons Schedule. The entry includes the "preparations" of aconite, so that tr. aconiti (often combined with tr. iodi in a dental paint), and veterinary preparations containing Fleming's tr. aconiti are roped in.

Aconitine Poisoning.—See Aconite Poisoning, antidotes.

Aconitine, Sale of.—Aconitine and its preparations are mentioned specifically in Part I of the Poisons Schedule of the Poisons and Pharmacy Act, 1908. Ung. aconitini is thus brought into Part I of the Schedule. See Alkaloids, sale of, also Poisons Sale.

Act of God.—Term used in bills of lading and other documents indicating dangers which it is beyond human power to control or prevent; no one is legally liable for anything arising as a consequence of such disturbances in nature.

Acts of Parliament.—The statutory law, as distinct from the common law of the land, is found in Acts of Parliament. Before it has been passed by Parliament and received the Royal Assent an Act is known as a Bill. The procedure after proposed legislation has been framed in the form of a Bill is roughly as follows: The Bill is introduced in the House of Commons, "read a first time," and ordered to be printed. On an appointed day the Bill is submitted for a second reading, which is the beginning of the crucial stage in its career. If the second reading is agreed to the Bill is afterwards considered by the House upon the Committee and Report Stages, during which it may be subjected to amendments or rejected. Having passed these stages the Bill, as amended, is submitted to the House for its third reading. If the motion is carried the Bill then goes to the House of Lords, where similar procedure is followed, and in due course the Bill is returned to the House of Commons, where the Lords' amendments are considered. When the Bill has been finally approved by both Houses it receives the Royal Assent and becomes an Act of Parliament. While it is in the form of a Bill the sections of an Act of Parliament are called clauses. Acts are called either public or private. Public Acts are those which affect the population generally, while Private Acts apply only to individuals or to persons living in a particular locality. Since the passing of the Parliament Act, 1911, the powers of the House of Lords to amend or reject Bills passed by the Commons have been considerably curtailed. A money bill (i.e., one which seeks to provide funds for the public services) can, at the most, be delayed by the Lords for one month, while any other Bill will become law, in spite of rejection by the Lords, if it is passed by the Commons in three successive sessions.

Acquittance.—A discharge from a legal liability to pay money or perform a duty.

Adding Machines.—Machines for performing arithmetical operations in business are time-saving, and conduce to accuracy as the adding or calculation is the result of mechanical means. Large businesses employ various kinds of adding machines, and retail chemists can usefully employ a machine for adding up cash or credit sales, making out banking slips, dissecting sales, checking invoices, adding up the totals obtained on the C. & D. Stocktaking Sheets, and for many other of the operations involved in bookkeeping. A useful model of the Burroughs adding machine, which has a figure capacity of £9,999 19s. 11d., costs about £40. See Business Analysis.

Address, Forms of.—The correct method of describing titled customers, either on labels or in letters, is worth cultivation for commercial and professional reasons alike. The following are the more frequently used of these forms of address:—

ARCHBISHOPS.—The Most Rev. His Grace the Lord Archbishop of —. Letter opening: My Lord Archbishop, or, Your Grace.

The C.&D. Commercial Compendium

DUKES (DUCHESSSES).—His (Her) Grace the Duke (Duchess) of —. Letter opening: My Lord Duke, or, Your Grace (Madam).

MARQUISES (MARCHIONESSES).—The Most Hon. the Marquis (Marchioness) (of) —. Letter opening: My Lord Marquis (Madam).

EARLS (COUNTESSSES).—The Right Hon. the Earl (Countess) (of) —. Letter opening: My Lord (My Lady).

VISCOUNTS (VISCOUNTESSES).—The Right Hon. the Viscount (Viscountess) —. Letter opening: My Lord (My Lady).

BISHOPS.—The Right Rev. the Lord Bishop of —. Letter opening: My Lord (or My Lord Bishop). Wives of bishops do not take a title.

BARONS (BARONESES).—The Right Hon. Lord (Lady). —. Letter opening: My Lord (My Lady).

Dowagers usually have a Christian name prefixed—e.g., The Right Hon. —, Countess of —. Younger sons of earls, and all sons of viscounts and barons, are styled The Hon. —. Daughters of earls bear the title Lady —, and daughters of viscounts and barons bear the courtesy title The Hon. —.

BARONETS.—Sir —, Bt. (Bart.). Letter opening: Sir. Wives of baronets take the title Lady —.

KNIGHTS.—Sir —. Letter opening: Sir. Wives of knights take the title Lady —.

DEANS.—The Very Rev. the Dean of —. Letter opening: Very Rev. Sir.

ARCHDEACONS.—The Ven. Archdeacon —. Letter opening: Venerable Sir.

Clergy possessing the title "the Hon." usually take it first in order, with "and" between it and "Rev." In the case of a higher lay title, the order is reversed and the "and" is omitted.

Members of the Privy Council are entitled to "the Right Hon."

Puisne judges are styled "The Hon. Mr. Justice —." Letter opening: Sir.

Officers of the Army and Navy have their professional rank, if higher than that of lieutenant (which is not given in writing), placed before any other title—e.g., General Sir —.

Ambassadors and their wives take the title His (Her) Excellency.

Academic abbreviations follow the name—e.g., —, Esq., M.D.; the Rev. —, D.D.

Addressing Machines.—Time-saving method of addressing, used where large quantities of invoices or circulars are sent out at intervals. The addressograph system is as follows: A metal plate stamped in relief with the required name and address by a special machine is inserted into a frame. In use these tablets are transferred to the printing machine by a "feed" apparatus. As each individual plate passes through in the process of the printing it is carried back into its box.

Adhesive Plaster.—Official synonym of emplastrum resinae, and as this consists chiefly of lead plaster, adhesive plaster is a preparation containing lead plaster (a Part I poison) within the meaning of Part II of the Poisons Schedule. The spread plaster is also a Part II poison, and should be sold under the conditions laid down by the Pharmacy Act, 1868. Lead plaster was placed in Part I of the Poisons Schedule because of its use as an abortifacient.

Adhesive Stamps.—As a rule, Inland Revenue stamps must be impressed upon the documents which require them. There are, however, a few instruments which may be stamped by means of adhesive postage stamps. An agreement, under hand only, which is not liable to a special duty, may be stamped with a 6d. adhesive stamp, which is usually cancelled by the signatures of the parties. The same value stamp may be used for a Charter-party, and a 3d. stamp covers a warrant for goods. Upon letters of renunciation of shares in a company, 1d. stamp may be used if the amount is less than £5, and a 6d. stamp if it

is £5 or more. A 2d. adhesive stamp may be used for a receipt and for a bill of exchange (including a cheque) for payment of money on demand. A 1d. adhesive stamp covers a lease of a dwelling-house, or part of one, for a definite term not exceeding a year where the rent does not exceed £10. An adhesive stamp may also be used for protests of bills of exchange and notarial acts (1s.); voting papers, proxies and copies of or extracts from registers of births, marriages, deaths or burials (1d.).

Adjudication Order.—An order made by a Court adjudging a debtor bankrupt after a receiving order has been made against him. The order of adjudication may be made on the application of the debtor himself, a creditor, any person interested, or the official receiver. The effect of the order is to disqualify the bankrupt from holding the offices of member of Parliament, justice of the peace, mayor, alderman, councillor, or trustee in bankruptcy, and to vest all his property in the official receiver or trustee for division among his creditors.

Administration Order.—When a judgment has been obtained in a County Court and the debtor is unable to pay the amount at once and his whole indebtedness, including the judgment debt, does not exceed £50, the Court may make an order for the administration of his estate and for the payment of his debts by instalments or as the Court thinks fit. Notice of the order is sent to all the creditors, of whom the debtor must furnish a list when he applies for the order. The effect of the order is that no creditor will have any remedy against the debtor in respect of any debt notified by the debtor except with the leave of the Court.

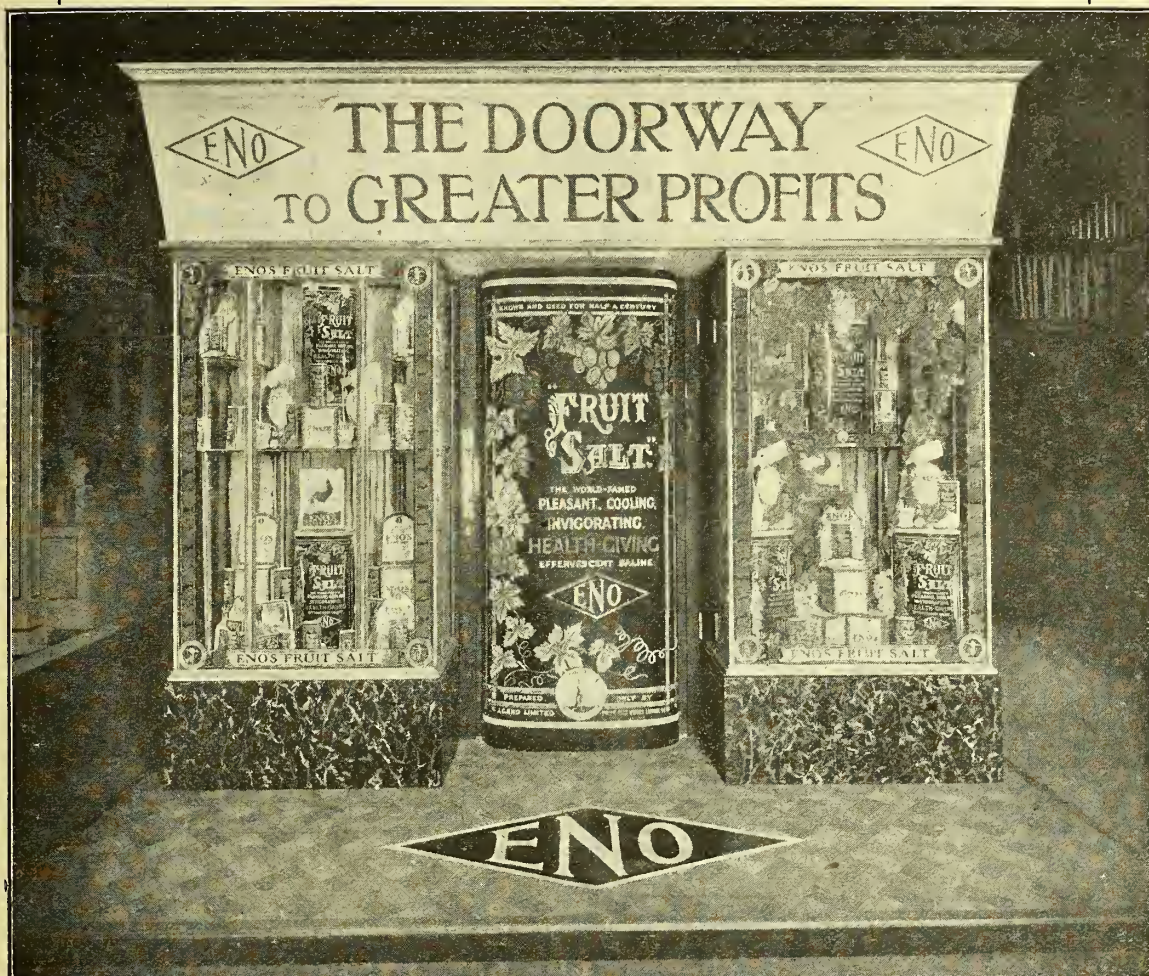
Administering Poisonous Drugs to Horses.—See Animals, Drugging.

Adulteration.—The act of debasing or corrupting an article by spurious admixture. (See Merchandise Marks Act and Sale of Food and Drugs Acts.)

Ad valorem means in proportion to value. Applies to Customs duties on goods. Commonly expressed as percentage on the price.

Advance.—Money paid before it is legally due. The term is used to denote money paid to a consignor on the receipt by the consignee of a bill of lading, or any sum paid in advance to secure a benefit.

Advertisement Records.—Any kind of advertising which is intended to occupy a definite place in the scheme of conducting a business necessitates the keeping of systematic records. These are preferably of a simple character at the outset, and grow into summaries and charts of a more detailed character as the advertising system develops. The advantages of such records are definite and considerable. To begin with, they show, if properly kept, the response to any given appeal; and the application of this principle to slack seasons at once cuts out avoidable waste of money. The best size and position for each advertisement can be ascertained by specific tests. Where coupons are employed, the advertiser who knows his public will insist on a position in the outer column, and preferably at one corner of a page, so that they may easily be torn out—few, probably, will be cut out. He will also find it advantageous to include "Occupation" as one of the particulars to be filled in: this will enable him to sift out worthless inquiries in the case of high-priced articles—although, of course, the possibility of such articles being wanted for presentation will not be overlooked. It is courteous, in replying to inquiries, to adopt the form of name apparently preferred by the applicant: people, for example, possessing a Christian name having the initial "A" are often abnormally sensitive concerning its use. The inclusion of such a phrase as "Write to Department XY" acts as a "key" by which results obtained from different newspapers can be separated. It is hardly necessary to add that a specimen of each advertisement inserted in a newspaper or otherwise distributed should be filed for reference.



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The World-Famed Effervescent Saline

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*Morphine, Aceto-Morphine, Opium being subject to the restrictions of the Dangerous
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GRAND PRIX, BRUSSELS, 1910; GRAND PRIX,
LONDON, 1909; GOLD MEDAL, ST. LOUIS, 1904.

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BARKS—Cascara, Elm, Sassafras, Wild Cherry.
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Horehound, Lobelia, Sage, Senna, Thyme.
ROOTS—Aconite, Anglica, Dandelion, Gentian, Helle-
bore, Mandrake, Orris, Rhapontica, Senega, Squill.
SEEDS—Celery, Cummin, Anise, Fennel, Quince.
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PHENACETIN
PHENOLPHTHALEIN
POTASS. PERMANGANATE
SULPHONAL
SODIUM BARBITONE**

JOHNSON & SONS

Manufacturing Chemists, Ltd.

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MANCHESTER OFFICE 12 QUEEN STREET, DEANS GATE

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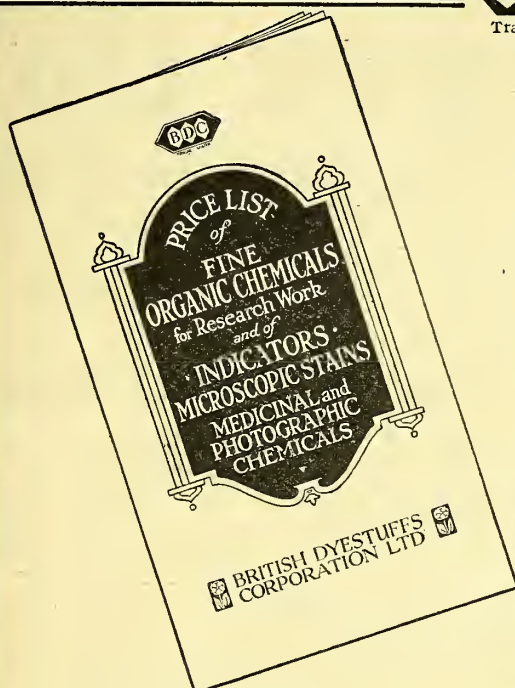
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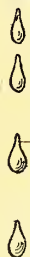
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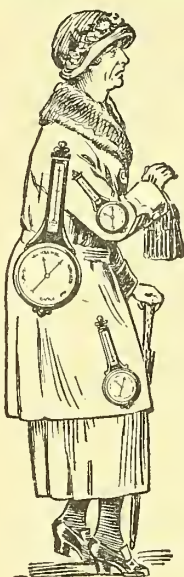
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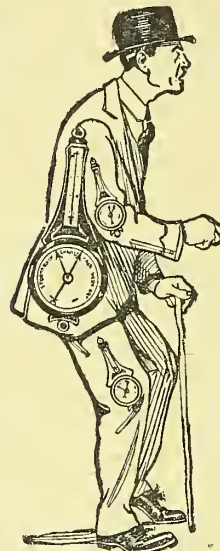
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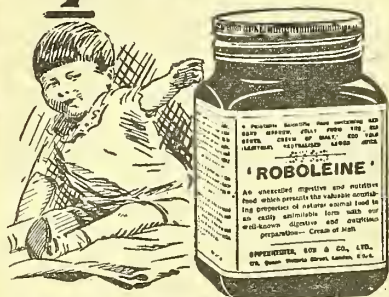
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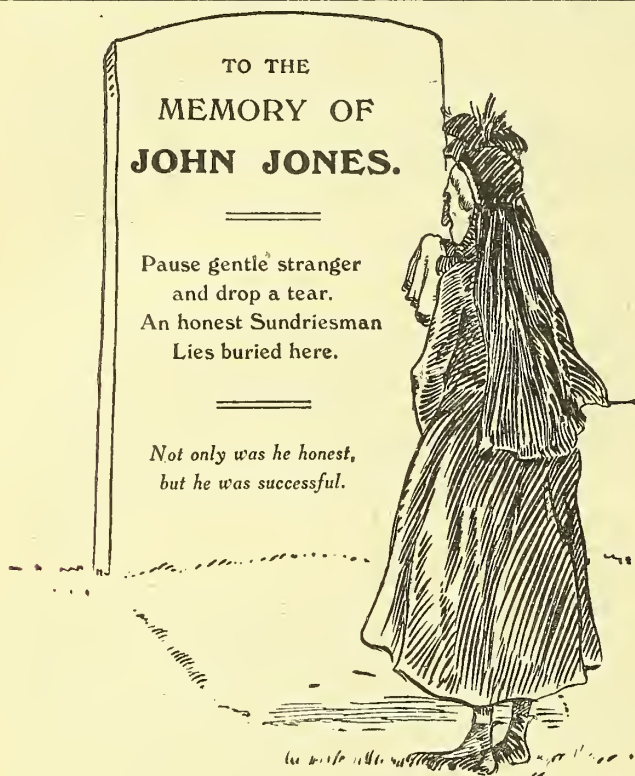
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THE CHEMIST AND DRUGGIST SUPPLEMENT

42, CANNON ST.
LONDON E.C.4

JULY 26, 1924

This Supplement is inserted in every copy of The Chemist & Druggist.

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Also the BENEFICIAL INTEREST IN THE LEASE OF THE RIVERSIDE MANUFACTURING PREMISES, comprising:—One-storey Buildings, FLOOR AREA 8,000 FT., Dwelling House and Land, in all $\frac{1}{4}$ of an acre, held on lease at a rent of £100 per annum.

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will Sell the above by Auction, in Lots, on the Premises, on WEDNESDAY, 30th JULY, 1924, at 11 o'clock. Particulars and Catalogues of Richard A. Witty, Esq., F.S.A.A., Messrs. Button, Stevens & Witty, Chartered Accountants, 6 Dowgate Hill, Cannon Street, E.C.4; and the Auctioneers, 46 Gresham Street, Bank, E.C.2, and Kilburn, N.W.

TO CHEMISTS, OIL AND COLOURMEN, BUILDERS, FANCY GOODS DEALERS AND OTHERS.

FRYER, COOPER & CO. are favoured with instructions to Sell by Auction, at their Rooms, 3 Redcross Street, E.C.1, on Monday, July 28, at 1 o'clock, the Stock-in-Trade of a

BRUSH MANUFACTURER,

comprising 5,000 dozen Brushes in large variety. Distemper Brushes, Sash Tools, Banded Mops, Hair Dabbers, Squirrel Dabbers, Paperhanging Brushes, Flat and Pencil Overgrainers, 700 dozen Varnish Brushes in various widths, Tar Brushes, Mixture Washdowns, pure bristle Oval Knots, Ground Brushes, Badger and Hog Shaving Brushes, Bristle Stipplers, Tooth Brushes, Flat and Round Hog Fitches, Travellers' Sample Brushes, and other items.

On view Saturday prior (till 1 o'clock) and morning of Sale. Catalogues of the Auctioneers.

SITUATIONS OPEN.

[HOME.]

RETAIL.

6s. for 40 words or less; 6d. for every additional 10 words or less, prepaid.

The ADVERTISER may if preferred have replies addressed to this Office, and forwarded on payment of an additional charge of 1/-.

ABERDEEN ROYAL INFIRMARY.

DISPENSER (qualified) wanted, to commence duty on October 1, 1924; salary £200 per annum. Applications and testimonials (16 copies) to be lodged with the subscriber not later than Thursday, August 7.

A. SCOTT FINNIE, Clerk and Treasurer.

343 Union Street, Aberdeen.

July 15, 1924.

BIRMINGHAM.—Qualified Branch Manager required in a few weeks; young and well up in the trade, including Photographic; good Salesman and Window-dresser. Please give full particulars, age, experience, salary, photo if possible, to 280/17, Office of this Paper.

BRADFORD.—Qualified Locnm, lady or gentleman, required from August 9 till 16; Assistant kept. Terms, etc., 4/40, Office of this Paper.

BRIGHTON.—Qualified Manager required for branch business in mixed class district, with some Photographic; good references required; permanency for suitable man; wages and commission. Apply, with photo and full particulars, Edgar Jones, 94 Preston Drive, Brighton.

BROMLEY, KENT.—Wanted, at once, qualified, experienced Assistant, permanency, to good-class and Dispensing business. R. C. Davenport, 36 London Road, Bromley, Kent.

CHESHIRE.—Wanted at once, smart Junior for good-class Business; age about 22; Dispensing, Counter, Window-dressing and knowledge of Photo. preferred. Give references, age and salary required to 4/12, Office of this Paper.

HERNE BAY.—Wanted, end of August, gentlemanly Junior, used to good-class business, also knowledge of Photography, D. and P. Age, salary (indoors, comfortable home offered), height, references, etc. Apply Bayley, Chemist, Herne Bay.

HUDDERSFIELD.—Wanted, Junior qualified Assistant early in August; temporary or permanent. State age, salary required, and give reference to last situation to R. C. Walshaw, 4 Market Place, Huddersfield.

LEEDS DISTRICT.—Qualified Manager required immediately for working-class Retail business. Apply, stating age, experience, salary required, photo, etc., 2/9, Office of this Paper.

LINCOLN.—Unqualified unmarried Junior Assistant wanted for mixed business; easy hours; no extra duty. Give full particulars and terms (outdoors). Hague, Chemist, Lincoln.

LIVERPOOL.—Junior or Improver (male); outdoors; state age, height, experience, and salary required; enclose photo if possible. J. E. Greener, M.P.S., Chemist, 128 Oakfield Road, Liverpool.

LIVERPOOL DISTRICT.—Smart Assistant, age about 25, required for Family Retail, N.H.I. Dispensing and Photographic Business; must be obliging Counterman, careful Dispenser, trustworthy and energetic. Give full particulars of experience, height and salary required, enclosing photograph, which will be returned, 3/26, Office of this Paper.

LONDON.—Outdoors. Junior Assistant (male) wanted, with good Counter experience and knowledge of Photographic Retail. Apply, with full particulars of experience, age, salary required, etc., to Frizell & Co., 1 Cranbourn Street, Leicester Square, W.C.2.

LONDON.—Qualified, for N.H.I. and Counter work; working class; middle-age, if active, preferred; view ultimate succession. State salary, with usual particulars, "Senex" (P.C.B. 84/12), Office of this Paper.

LONDON, E.—Assistant, young, gentleman, qualified; N.H.I. and quick Counter trade. Full particulars first letter, age, experience, references, etc. Apply Massinghams, Ltd., Chemists, 34c Green Street, E.2.

LONDON, N.W.5.—Wanted, Unqualified Junior, about 23, for a fortnight, August 11 to August 23; in or outdoors. State salary expected. 3/8, Office of this Paper.

LONDON, S.E.—Qualified Assistant wanted, lady or gentleman (outdoors), for quick Cash Retail; no Sunday duty; close 1 o'clock Thursdays. State age, salary required, and full experience. Brooks', 509 New Cross Road, S.E.14.

LONDON, S.E.—Required, an experienced Assistant (Senior); outdoors; permanency; good Dispenser and Counterman, with knowledge of Photography. Apply by letter, stating full particulars, age, height, experience, salary required, and when disengaged, to J. W. Rumsey & Son, 535 Lordship Lane, S.E.22.

LONDON, S.E.—Qualified Chemist required at once; permanency; good all-round man. Apply 50/513, Office of this Paper.

LONDON SUBURB.—Qualified Manager required immediately for middle working-class Retail and Photo. business; good prospects for worker. Apply, stating experience, salary required, photo, etc., 5/2, Office of this Paper.

LONDON, W.—End of September; Qualified Manager for high-class West-End Business; previous experience in a similar position essential. Apply 50/509, Office of this Paper.

LONDON, W.—Required, now or shortly, a very smart business-like Senior of good height, appearance and address, and not over 38; must be a first-class Counterman; qualification not essential provided competent and keen. W. V. Wright, Ltd., 25 Broadway, Hammersmith, W.6.

MANCHESTER.—Junior Assistant required. Apply by letter only; state age, height, salary required; one just finished apprenticeship preferred. Simpson's, Chemists, Levenshulme.

MANCHESTER.—Wanted, immediately, young (preferred) qualified Assistant for Light Retail and Dispensing; quick, neat, and accurate Dispenser. Apply, giving full particulars and salary required (outdoors), "S." 42 Warde Street, Hulme, Manchester.

MANCHESTER DISTRICT.—Qualified to manage high-class Pharmacy; age about 30; must have had first-class experience and highest references; good Window-dressing essential. State age, experience and salary required, enclose photograph, and state when at liberty. Apply 281/15, Office of this Paper.

MANCHESTER DISTRICT.—Wanted, immediately, qualified lady or gentleman, M.P.S., for Insurance Dispensing in working-class business, morning and evenings. Apply, stating age, experience, and salary required, to 218 Hyde Road, West Gorton, Manchester.

OXFORD.—Qualified lady Assistant required immediately; must be experienced in Dispensing and Retail; reasonable hours; please state experience and salary required; permanency if suitable. 50/506, Office of this Paper.

MIDLAND CITY.—Middle of September, capable Assistant, 30 years of age or just over; qualification not necessary, but must have good business capabilities and knowledge of Book-keeping and Accounts; permanency, or engagement for several years at least essential; will be required to assist in Buying, etc., and if necessary this will be taught; must have ability to control staff and organise routine under systems already existing; good salary to right man; full particulars, photo, references, salary in first letter. 50/500, Office of this Paper.

SHREWSBURY.—Unqualified male Assistant required at once, age about 25. Please give particulars of height, experience, and salary required, together with references and photo; no after-bour or Sunday duty. J. E. Henshaw, Chemist.

SOUTH WALES.—Young, energetic Manager required; qualified. Send full particulars in first instance, 3/28, Office of this Paper.

YORKSHIRE.—Manager wanted for Branch; age about 30; one accustomed to Photographic trade. Apply, with two recent testimonials, stating age, salary required and photo, and when disengaged, 3/9, Office of this Paper.

AN experienced Locum wanted at West-End branch for one month; hours 9.30 to 7, Saturdays 2 o'clock. Apply, "Statim," 73 Red Lion Street, Holborn, W.C.

ASSISTANT or Junior, outdoors, for Stock, Dispensing, Counter; knowledge Photography; give experience, salary required, and full particulars; hours are 9 to 8, Wednesdays 1, Sunday evenings one in three. Moreton Thomas, Rexall Pharmacy, 150 Merton Hall Road, Wimbeldon, S.W.19.

ASSISTANT for Drug Store, capable of managing. State age, wage and experience, and enclose copy of references. P.C.B. 83/27, Office of this Paper.

ASSISTANT wanted at once; must have general all-round experience; also lady Assistant. Apply, with full particulars, to Oliver & Co., Cash Chemists, 487 High Road, Tottenham, N.17.

ASSISTANT, unqualified (male), not over 36, for good-class light Retail and Dispensing; no Sunday or Bank Holiday duty; permanency for suitable man. Please give full particulars age, height, salary, references, etc., in first letter. 3/40, Office of this Paper.

AUGUST.—Wanted, qualified Manager, about 40, for country business in South England; permanency. Apply, with usual details of experience, salary desired, and references, to "M.", c/o Evans Sons Lescher & Webb, Ltd., 60 Bartholomew Close, E.C.1.

CAPABLE Assistant required at once for four months' engagement; short hours; no N.H.I. Dispensing; would be suitable for man sitting for October examination. 1/18, Office of this Paper.

CAPABLE unqualified Assistant wanted for my London house. Full particulars in first letter to C. Bellamy, c/o Druce & Co., Chemists, Oxford.

ELDERLY Pharmacist required for small limited company in Lancashire industrial town; light duties; small N.H.I. Full particulars, salary required, etc., in first letter. 2/2, Office of this Paper.

GENTLEMANLY Junior required at once. Full particulars and references to A. W. Harrison, Ph.C., 16 Wilson Street, Middlesbrough.

GIBSON DIXON, Chemist, Halifax, has a vacancy for an Assistant for about a month from August 8; holiday relief; would suit young gentleman just failed in part of examination and waiting for October. Full particulars in first letter.

JUNIOR Assistant with pre-war apprenticeship preferred; good character and undeniable references, and an Apprentice who has passed entrance or Part I Examination, where a general training in pharmacy is available. 1/17, Office of this Paper.

JUNIOR or Improver, well up in Dispensing and Counter; outdoors; healthy neighbourhood near London. Full particulars, with photo and salary required, to 2/12, Office of this Paper.

JUNIOR or Improver; good appearance (at once); state salary (outdoors), full particulars, references, etc. Shaker & Reed, Ltd., Llanconston.

JUNIOR required immediately for good-class Family and Dispensing Business; excellent opportunity for gaining all-round experience. 84/130, Office of this Paper.

JUNIOR Assistant or Improver required for progressive position in good London Pharmacy; must be smart Counterman and Dispenser. Fullest particulars should be sent. All replies will be acknowledged immediately. P.C.B., 84/14, Office of this Paper.

LADY Assistant, qualified preferred, wanted for beginning of August. Write giving full particulars. Apply, by letter only, to J. M. Pearson, M.P.S., 63 Lupus Street, S.W.

LADY Assistant required end of August to take charge of Perfumery and Toilet Department; must have had highest class experience. State age, height, and fullest particulars in first letter. Newsholme, Ltd., Chemists, Sheffield.

LADY Dispenser required for Balham, Fulham Road and High Barnet districts; must have Hall Certificate. Apply by letter, stating full particulars, to 50/508, Office of this Paper.

LEWIS & BURROWS have a vacancy for a good unqualified Assistant (outdoors). Apply by letter only, giving full particulars (state when disengaged), to 146 Holborn Bars, E.C.

LOCUM, unqualified, wanted to manage Drug Store, August 18 to September 6; good experience in Photography, etc.; no dispensing. Apply, with all particulars, to Geo. Deacon, Cash Drug and Photographic Stores, Wisbech, Cambs.

LOCUM, unqualified, as Assistant for good-class business, August 5 to 19; outdoors. Terms, etc., to Peel, 7 Half Moon Lane, Herne Hill, S.E.

LOCUM, qualified, for two weeks during August-September. Usual particulars and references to Green, Chemist, Quorn, near Loughborough.

LOCUM; one day only, Saturday, August 2, Finsbury Park; 10s. "K.", 286 Seven Sisters Road, N.4.

LOCUM, lady or gentleman, qualification immaterial, from August 18 to 30 inclusive. 288 York Road, Wandsworth, S.W.

LOCUM, qualified, to manage Light Retail and Dispensing business, near Birmingham, for fortnight commencing September 1; good wages and fare paid both ways. Please give particulars of age, experience, references, and state terms (indoors), to Rex Allen, Chemist, West Bromwich.

LOCUM or Temporary Assistant, young, wanted at once; good knowledge of Developing and Printing essential; qualification not essential. A. E. Sewell, Chemist, Huntingdon.

LOCUM, qualified, wanted for last 2 weeks in August or nearest. Apply Harry Stephens, Ltd., Chemists, Plympton, Devon.

MANAGER, qualified, for South London medium Cash Retail, with Photographic; must be good Salesman and Window-dresser. Please state age, experience, and salary. 278/26, Office of this Paper.

MANAGER required; high-class London Business; good salary and prospects; must produce highest references; outdoors. Apply "K.", 50/514, Office of this Paper.

MANAGER, qualified, for Branch in Midlands; live over shop. State when disengaged, salary required and all usual particulars, 3/19, Office of this Paper.

MANAGER for sea coast town West of England; 30 to 45 years of age; a permanency to the right man; retaining salary and commission on progressive sales. Two recent references and when disengaged to Harrie, Devon Wharf, Mile End, E.1.

MANAGER required for branch business end of August; good all-round experience with knowledge of Photography and first-class references principal considerations. Apply (with as full details as possible in first letter) to Holman, Ham & Co., Ltd., St. Anne's Pharmacy, Exeter.

MURRAY & McCONACHIE, LTD., Winchester, require qualified Locum from August 18 to 30; must be well recommended.

PART-TIME Assistant (male, young) wanted after Bank Holiday for evenings and Saturdays (afternoons and evenings). Apply, stating age, experience, salary required, and when disengaged, "C. B.", 20 New Street, Dorset Square, N.W.1.

QUALIFIED lady Dispenser and Book-keeper required. State age, experience, and salary required (outdoors). Drs. Peers and Townshead, Great Yarmouth.

QUALIFIED Assistant for Dispensing Counter; must be thoroughly experienced in Dispensing, quick and absolutely accurate. Particulars of age and experience, with names of last two employers, to J. & H. A. Averill, Stafford.

QUALIFIED Assistant wanted for about a month. Badgett, Chemist, Clarence Place, Newport, Mon.

QUALIFIED Manager, immediately, for Country Business; permanency to suitable man; short hours. Give full particulars age, wage and references to Sturdy, 91 Falsgrave Road, Scarborough.

QUALIFIED Manager, married, for light Retail and Dispensing (N.H.I.) Business, situate in a most progressive manufacturing town in the West Riding of Yorks; small house available; good offer to a capable and reliable man. P.C.B. 84/13, Office of this Paper.

QUALIFIED, gentlemanly Assistant required at once for good-class Country Business. Full particulars first letter, please. 4/14, Office of this Paper.

REQUIRED, from August 11 for two weeks, unqualified Junior as Locum, aged about 20, used to Dispensing and Kodak trade. Apply, stating age, wages required, and references, to Walker, Chemist, 9 Hospital Street, Nantwich.

REQUIRED, a qualified Assistant for the Dispensing Counter; West-End experience essential; hours 9-6, Saturdays 9-1; no Sunday or holiday duty. Apply Production Manager, Harrods, Ltd., 44 Hans Crescent, Knightsbridge.

REQUIRED shortly for winter season, a well-educated Junior or Improver for good-class suburban business, situated in healthy N. London area. Full particulars, age, salary, etc., together with photo (to be returned) to 50/505, Office of this Paper.

REQUIRED, Manager; qualified; must have initiative and be able to control staff; permanency; plenty of scope for the right man. Apply by letter, stating full particulars, to 50/507, Office of this Paper.

SHORTLY, a competent Assistant, accustomed to Dispensing and good-class Retail, to September 20. Applications, stating details of former experience, age, height, salary required, and when disengaged, to D. T. Evans, Chemists and Opticians, Margate.

SMART, Unqualified Assistant for West End; age about 25; good Dispenser essential. Letters only, giving full particulars and salary, to "D" Department, 33 Mortimer Street, W.1.

SURGICAL Instrument business in the provinces, Assistant. Address, stating age, duties accustomed to, and wages expected; reliable references as to character indispensable. Reply 50/502, Office of this Paper.

UNQUALIFIED Assistant, about 23, with good-class experience, for August 4, or as early as possible. Marmaduke Firth, 31 North Parade, Bradford.

UNQUALIFIED Relief, Junior, for one month; Light Retail, Dispensing Business; an early date desirable. Samm, Chemist, Hitchin.

WANTED, immediately, Junior Assistant accustomed to high-class business. State full particulars in first letter, enclosing photo. Maund, F.C.S., Whalley Range, Manchester.

WANTED, qualified Locum for Dispensing, male or female, from August 11 to September 1 inclusive; £4 10s. per week, with dinner daily and travelling expenses; a recent testimonial required. Apply, Medical Superintendent, Monsall Hospital, Manchester.

WANTED, immediately, unqualified Junior Assistant, male. Full particulars, stating salary required (indoors), with references, to Cooper, 107 London Street, Reading.

WANTED, qualified man to manage branch (Light Retail). Please give full particulars. Whitwell, Chemist, Peterborough.

WANTED immediately, Young Men as Junior; unqualified, with experience of high-class Dispensing and Retail; must be quick and accurate worker. Apply, stating age, height and salary required (outdoor), to Jenkins, Pharmacist, 190 Broadhurst Gardens, N.W.6.

WANTED, as Apprentice in the immediate future, Gentlemanly Youth, age about 16; must have passed Preliminary examination. Thomas, Chemist, Ilford, Essex.

WANTED, Qualified Assistant; another Assistant kept. Please send particulars of salary and experience, Tiernan, Chemist, Greenhithe.

WANTED, Junior Assistant, male, outdoors, age 18 to 20, for Retail and Dispensing business. Apply, giving full particulars as to experience, height, salary, etc., with reference, to Thomas, Chemist, Faversham.

YOUNG qualified Assistant required for branch in working-class district; permanency with good prospects. Apply, stating age, experience, and salary required, to Colmans, Ltd., 161 Bury New Road, Manchester.

£3 5s. WEEKLY.—Qualified Manager required to manage small branch near St. Helens; would suit elderly gentleman requiring permanency; easy berth. Gardam, Chemist, Sutton, St. Helens.

WHOLESALE.

LANCS., Midlands, South Coast and Ireland.—Excellent line of merit; 20 per cent. commission; proved Dry Clean sell 3d. and 6d.; liberal bonus; balloon scheme; fine opportunity for first-class salesman with extensive personal connection. 4/ Office of this Paper.

LANCASHIRE House require the services of an experienced Book-keeper; applicants must be quick at figures, afraid of work, nor under 30 years of age. Apply, with particulars as to experience and salary required, to 3/1, Office of this Paper.

A LONDON Druggists' Sundries House requires Representative for Cornwall, Devon and Somerset; must have good live connection. Apply, stating terms, to 1/11, Office of this Paper.

DRUGGISTS' SUNDRIES.—Manchester Sundry House requires Resident Representative for Sheffield and district; connection essential. Apply, giving details of experience and salary required, 4/39, Office of this Paper.

QUALIFIED Pharmacist required as Representative for respectable house; duties consist of interviewing medical men and chemists; experience not essential; age 25-30; exceptional opportunity for gentleman desirous of entering the Wholesale. Apply by letter, sending photograph, giving full particulars of experience, commencing salary, height, etc., to "H. K.", 50/5 Office of this Paper.

REPRESENTATIVE wanted for Midlands, with good connection amongst Chemists, to represent old-established firm Dressings and Toilet Brushes; good commission. Apply 49/5 Office of this Paper.

REPRESENTATIVE required by London Wholesale Druggists must have had experience in South Wales and West England; would consider part-time; expenses and commission. Apply, with full particulars, to 50/512, Office of this Paper.

REPRESENTATIVES wanted in provinces with good connection, Chemists and Stores, to sell Green Olive Oil and Castile Soap; repeat orders assured; commission basis. Full particulars of district and references to "W. M. C." (P.C.B. 84/1 Office of this Paper.

REQUIRED by Manufacturing Perfumers and Toilet Sundries good, live Representative who could undertake successful sole representation in wide area; very competitive prices; test at interview. Write in first instance to 280/40, Office of this Paper.

SALESMAN

REQUIRED by well-known Packers of Pharmaceutical Specialities to take over good connection in the West Midlands and N. Wales; must have previous experience in the trade; excellent references required, including last or present employment. Apply 50/501, Office of this Paper.

TWO Representatives required by London firm of F Specialists; experience in interviewing Doctors essential. Apply by letter in first instance, stating qualifications and experience, to 280/39, Office of this Paper.

YOUNG man required, at once, for Manufacturing Laboratory experience in Tincture making essential. Apply, giving particulars as to age, experience and wage required in letter, to Goodall, Backhouse & Co., Leeds.

[COLONIAL, INDIAN AND FOREIGN.]

BRITISH COLONY.—Qualified Assistants requiring situation in a healthy British Colony should apply to Lennon, 12/14 Lafone Street, London, S.E.1.

CALCUTTA.—Wanted, young man with Minor qualification under 25, unmarried, for old-established British firm agreement 4 years; salary, first year rupees 400, second third 450, fourth 475 monthly; passage paid both ways. Apply giving particulars of experience, to P.C.B. 82/12, Office of this Paper.

COLONIES.—Pill Maker. A good all-round man required in a Colony; must know business thoroughly in every respect; unmarried preferred; good prospects; passage paid out. Apply by letter only, to Lennon, 12/14 Lafone Street, London, S.E.1.

QUALIFIED Assistant, under 25, unmarried, with good Retail Counter and Dispensing experience, required for large established firm in Far East; 4 years' agreement; passage paid. Apply, giving full details of experience, etc., to 1/6, Office of this Paper.

SITUATIONS WANTED.

RETAIL.

[HOME.]

18 words or less; 6d. for every additional 10 words or less, prepaid.

ABLE qualified Chemist as Manager or otherwise; fully experienced; disengaged August 2; permanency or Locum. 26 Crosby Road, Forest Gate, E.7.

ECENT TESTIMONIAL: "Assiduous, energetic, keen, ever salesman, display artist, a man with selling ideas, of increasing any business." Qualified Chemist-Optician permanency, or Locum with view thereto; now at liberty; interview if desired. "Squareman," Lynton, Wood-venue, Wolstanton, Staffs. Phone: 93 Wolstanton.

VE Assistant; unqualified; 32; thoroughly capable, trnst-erthy, and experienced; anywhere; Locum or permanency. Office of this Paper.

Manager, branch or otherwise; qualified; middle-aged; married; responsible position wanted; permanency; live on s if necessary; first-class West-End and country experi-Dispensing, Photography, Connter. 4/20, Office of this

SPENSER-BOOK-KEEPER, disengaged, requires post; cellent reference; state salary. Address Jones, c/o 12 treet, S.S., Blackpool.

MANAGER or Senior Assistant; Major man; 28; London perience; good all-round knowledge; to commence 4. Findlay, 43 Langdon Park Road, Highgate, N.6.

LIABLE and competent man, unqualified, seeks immet-permanency, either as Manager or Assistant. Apply us" (P.C.B. 84/7), Office of this Paper.

RTISER, M.P.S.; many years' experience own business; o Optical and Photographic; capable entire control; 5/10, Office of this Paper.

TANT; disengaged; good Dispensing and Connter experi-ice; Photographic Salesman and Window-dresser. Shields, e Road, Kennington, S.E.

TANT (lady, 24); 6½ years' good all-round experience; ndon or near; capable, energetic. Apply Hawkes, c/o wards, 85 Park End, Bromley, Kent.

TANT; unqualified; 32; married; good Dispenser, etc.; cellent references; disengaged shortly; permanency; preferred. "Sodium," 1a Mona Road, Eastbourne.

TANT seeks situation in South England; 8 years' all-nd experience, including 3 years high-class Dis-; tall, and good Window-dresser. Reding, Preston, near ury, Kent.

TANT; nnqualified; 24 years' all-round experience, ndon and country; good credentials; single. "Chemicus," e," The Moor, Hawkhurst, Kent.

TANT, middle-aged, unqualified, seeks post; small ntry town preferred; good references; all-round know-Dispensing, N.H.I., etc.; not afraid of hard work; highly uded by present employer; slight knowledge of Photo-Apply A. Everson, c/o Mr. Turton Green, 1 Market lenley-on-Thames.

ETENT Assistant, unqualified, age 30 years, seeks ortable berth for Counter and Dispensing; excellent s; trustworthy; abstainer; time to work out notice. rticulars to T. Lloyd, 24 Bartlett Street, Caerphilly,

TRY—Wanted, management of Conntry Pharmacy, with ng accommodation; best all-round experience; moderate age 35; married; one child. Offers to—"Pharmacist," ley Street, Oldham.

RGAGED—Unqualified; 18 years' good experience, Dis-Dispensing, Photographic and Connter; good Salesman; Optician; lately managing for six years; London or s preferred. P.C.B. 83/26, Office of this Paper.

NSER (male); nnqualified; 15 years' experience, country ator; would learn car; mechanical knowledge; useful. iser," 124 York Road, S.E.1.

RLY, active, qualified Chemist desires post; permanent Locum; good references. Address "Pharmacist," 49 treet, Rishon, Lancs.

ENERGETIC man desires change; 20 years' experience; charge e of Photographic; expert in this branch. "Lancs," 4/33, Office of this Paper.

JUNIOR, referred Part II Minor, requires temporary sitna-tion; Photographic; Midlands preferred, not essential. 5/8, Office of this Paper.

LADY, young, unqualified, experienced, and not afraid of work, desires post with Chemist where energetic help is required; able to invest £200; suit elderly or one indifferent health. 4/21, Office of this Paper.

LADY Dispenser requires post with Doctor or Hospital; excel-lent references; Birmingham or Wolverhampton. Apply 4/6, Office of this Paper.

LADY Dispenser (Hall), Book-keeper, Nursing experience 4½ years, Dispensing and Clerical 5 years, desires post, Doctor, Chemist, Institution; Yorkshire preferred, but not essential. Croft, Holme, Holmebridge, near Huddersfield.

LADY Assistant, 22; unqualified; 6 years' experience, Dispens-ing, Photographic, Counter and Window-dressing; in or near London. Watling, 11 Fairholme Road, Harrow.

LADY Dispenser (Apothecaries' Hall) desires post in London district, either Hospital, Doctor or Institution; age 20; knowledge of Shorthand and Typewriting. Address Miss Wood-bridge, Roseth Farm, Harrow.

LADY Dispenser (Hall) requires post, Doctor, Hospital or Institution; 3 years' experience. Allanson, 4 Hcathville, Dallington, Northampton.

LOCUM, qualified, reliable, open for engagements August; Scotland preferred. John Farley, 12 Lawside Road, Dundee, Scotland.

LOCUM or permanent; qualified; middle-aged; moderate salary; easy hours. "E. B.," Chemist, Belmont, Plympton, S. Devon.

LOCUM; disengaged July 30; best experience; London or country; qualified. "Chemist," 35 Stoney Stanton Road, Coventry.

LOCUM or Cover; qualified; highest references; open dates, August 23 forward. Drackley, 35 Bensham Lane, London Road, Croydon.

LOCUM Tenens; disengaged July 28. Griffith, 11 Lindum Terrace, Rotherham.

LOCUM; qualified; varied experience; vacant dates, August 11-30, September 15-27. Wrather, West Crescent, Darlington.

LOCUM; good-class experience; capable Dispenser; disengaged; good references, qualified, and excellent Salesman. "Jacobus," 125 Upwell Street, Sheffield.

LOCUM or permanency; disengaged August 5; London or near; thoroughly experienced. "B.," c/o Bromley, Chemist, Whetstone, N.

M.P.S., SMART, active, with long experience as Manager, requires similar post in London or Home Counties; good organiser and Dispenser; general knowledge of Photo; careful buyer and accustomed to control "Pharma-cist," 204 Stapleton Hall Road, Stroud Green, N.4.

M.P.S., ELDERLY, energetic, well connected, long experience; photo or interview; fare one way; terms very moderate; as Locum or country branch, or supervise. "Minor," 50 Peveril Street, Nottingham.

M.P.S., 34, good appearance, average height, well up in Photographics, some knowledge Optics and French, desires berth, preferably in London; part-time considered; just returned from abroad; prior to going abroad had Bath, London and Paris experience; interview any time. Write, stating salary offered, to "Pharmacist," 67 Sutherland Avenue, Maida Vale, W.

MANAGER; qualified; age 36; married; temperate; 19 years' experience, Dispensing, Window-dressing, Photography; with view to succession or not. 281/17, Office of this Paper.

PH.C., 26, 6 ft., desires post, Dispensing and Counter work; prefer London, West-End. 4/10, Office of this Paper.

PERMANENCY or Relief; unqualified; all-round experience, Dispensing, Agricultural, Photographic; abstainer; country preferred. Henderson, 61 Castle Street, Kendal.

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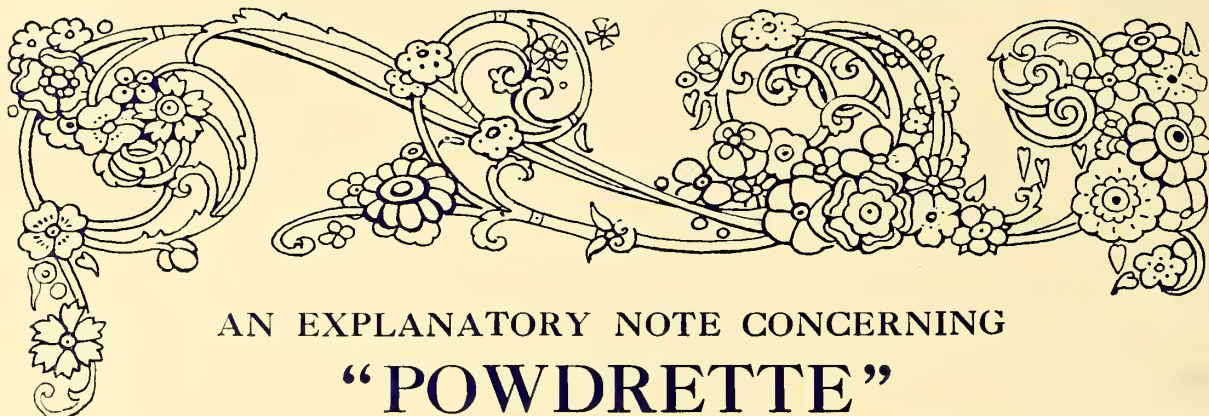
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